Exhibit A

State Defendants' Motion to Strike the testimony of Dr. Moon Duchin

Rough Draft - Day 9 - AM   1

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UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
EL PASO DIVISION

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LEAGUE OF UNITED LATIN	§	**3:21-CV-00259-DCG-JES-JVB**
AMERICAN CITIZENS, ET AL	§	
	§	
V.	§	**[!TIME] TO [!END TIME]**
	§	
GREG ABBOTT, IN HIS	§	
OFFICIAL CAPACITY AS	§	
GOVERNOR OF THE STATE OF	§	
TEXAS, ET AL	§	**MAY 31, 2025**

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BENCH TRIAL
BEFORE THE HONORABLE DAVID C. GUADERRAMA,
HONORABLE JERRY E. SMITH
AND HONORABLE JEFFREY V. BROWN
DAY 9 (AM SESSION) OF ^ NUMBER DAYS

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1   **PROCEEDINGS**

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1   **(Call to order of the Court.)**

2   JUDGE GUADERRAMA: Good morning, everyone.

3   Please be seated.

4   All right. So when we broke, Dr. Duchin was on the

08:34:25   5   witness stand.

6   Are we still continuing with her?

7   MR. STEINER: We are, Your Honor.

8   JUDGE GUADERRAMA: All right. You can get her,

9   please.

08:35:20   10   Good morning, Doctor. If you would have your seat

11   back in the chair. You are still under oath.

12   THE WITNESS: Thank you.

13   MR. STEINER: May I proceed?

14   JUDGE GUADERRAMA: Yes, sir.

08:35:33   15   MR. STEINER: And may I give the witness just a

16   copy -- just a binder with her three reports, if she needs

17   to refer to them? They were all admitted.

18   JUDGE GUADERRAMA: Yes, sir. Just show counsel,

19   make sure that they agree that's what that is.

08:35:49   20   MR. STEINER: (Tendering.)

21   **MOON DUCHIN, Ph.D,**

22   having been previously duly sworn, testified as follows:

23   **DIRECT EXAMINATION**

24   BY MR. STEINER:

08:36:05   25   **Q.**   So, Dr. Duchin, when we broke yesterday, we had talked

Laura Wells, RPR, RMR, CRR, RDR

08:36:36

1   about the Cluster 1 of your congressional districts around

2   the Tarrant and Dallas counties.

3   I would like to just return -- and if we could look

4   at -- looks like we're still having a little tinting

5   difficulty with the screen. But if we can look at what

6   has been marked as Exhibit 163.

7   Okay. We looked yesterday at the top two -- at the

8   top two maps here.

9   Can you explain what the bottom two maps are in

08:37:00   10   Exhibit 163.

11   **A.**   I can. But this will be a little harder with the

12   colors shift.

13   **Q.**   Well, we're going to do our best.

14   MR. STEINER: We have -- the screens are having

08:37:14   15   problems this morning. So we're having copies for Your

16   Honors and for the witness and for the State, I think,

17   printed. But I don't want to take time with that. And

18   I'll proceed with this. And at some point, if the screen

19   is remaining like this, we'll have better visual for you,

08:37:29   20   if that's okay.

21   JUDGE GUADERRAMA: Thank you, Mr. Steiner.

22   BY MR. STEINER:

23   **Q.**   So understanding that a lot of it will be not be as

24   crisp if we didn't have the pink overlay, which I think

08:37:41   25   they are working on, could you explain what the bottom two

08:38:01

08:38:17

08:38:35

08:38:52

08:39:07

1   pictures on Exhibit 163 are.

2   **A.**   Yes.   These are district movement pictures.   And so

3   what they show is both the benchmark district, the one

4   from ten years ago, and overlaid on that the new enacted

5   district.   And there are different colors, though we can't

6   tell at the moment.   One is green, and one is gray.

7   **Q.**   And so you can sort of tell on here that the

8   lightest -- and let me just ask you.

9   Are these -- are plots like this, is that also from

10   information in the data that you have produced with your

11   initial report?

12   **A.**   Yes, all this information is in the backup data.

13   **Q.**   The lightest shading there, that's gray.   Could you

14   explain what that -- and if we just focus on, I think,

15   what's CD-24, the bottom left corner.

16   **A.**   Great.

17   **Q.**   Yeah.   So if we -- can explain what the lightest

18   shading is, which, when it's in color, will be gray.

19   **A.**   Sure.   Can we have more of the picture on the left.

20   Great.   Thank you.

21   So the gray is the benchmark configuration.   That's

22   the configuration from before the census.   And the darker

23   shade, which will eventually be green, is the new

24   configuration.

25   JUDGE SMITH: Would you lean on into the

Laura Wells, RPR, RMR, CRR, RDR

08:39:15

1 microphone, just pull it closer, just a little bit.

2   THE WITNESS: Yes.

3   JUDGE SMITH: Thank you.

4 BY MR. STEINER:

5 **Q.** And so when it appears -- and here it is the lightest

6 color, and it will be gray -- what does that represent in

7 terms of the benchmark plan versus the current plan?

8 **A.** So the area where the gray is lightest, those are --

9 that's terrain that used to be in District 24 and no

08:39:32 10 longer is after redistricting.

11 **Q.** And when -- I don't know if other witnesses have used

12 it. So when you use the term "benchmark plan," what do

13 you use that to mean?

14 **A.** Here I'm just going to use "benchmark" throughout, as

08:39:44 15 I did in the reports, to mean the plan from ten years ago.

16 **Q.** The 2010 Texas plan?

17 **A.** That's right. Yes.

18 **Q.** And then there was -- and then there were two other

19 shadings.

08:39:54 20   Could you explain what each of those two other

21 shadings were or are.

22 **A.** Right. So the area that will show up in brighter

23 green, such as all the way to the right, this is areas

24 that were added to the new district and didn't used to be

08:40:09 25 in it. And then there's a kind of an overlap zone where

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08:40:30

08:40:44

08:40:55

08:41:10

08:41:28

1 you are seeing areas that used to be and still are. So

2 this distinguishes between the overlap of the old district

3 and the new, old but not new, and new but not old.

4 **Q.**   And did you examine, looking at, for example, the dot

5 densities, the demographics of areas that were moved out

6 of the district compared to areas that were moved into the

7 district?

8 **A.**   I did. And so we could compare this to the dot

9 density, but I'm afraid the colors really won't show up at

10 this point.

11 **Q.**   So we'll come back to it when we have --

12 **A.**   That sounds fine.

13 **Q.**   -- when the colors are a little bit better.

14   Did you do the same thing with respect to

15 Congressional District 6?

16 **A.**   I did that in all of the clusters. And so here in

17 particular, the other figure -- and there is enough here

18 for us to talk about it. You can see some elements of

19 District 6 in this figure. So you can see that it used to

20 be -- can we zoom in on the lower right figure? Thank

21 you.

22   So it used to be totally contained in Tarrant, with

23 Ellis and Navarro Counties. And the new configuration

24 extends a finger into Dallas and also adds three new, more

25 rural and more heavily White counties in addition to two

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08:41:46

1   more partial counties.

2   **Q.**   And aside from looking at the maps, did you look at

3   the data with respect to the demographics and make any

4   observations or conclusions with respect to the

5   composition of the districts from the benchmark plan

6   compared to the resulting enacted plan?

7   **A.**   I did. And here to get the numbers, I'll refer to the

8   report.

9   **Q.**   Sure. It's not a memory test. So, please, if you

08:42:02

10   need to refer to your report.

11   **A.**   Right. And so here we're looking at CD-6. And what

12   has happened in this district is that the urban and

13   diverse populations in Tarrant and Dallas have been

14   submerged in a much larger White population that comes

08:42:29

15   from most of these surrounding and more rural counties,

16   with the exception of Johnson. Johnson is not very rural.

17   It's a little bit denser than the others but still mostly

18   White.

19   And so this is what I call a pattern of submerging

08:42:46

20   urban and minority voters in a district where their

21   percentages tend to be too low to have an opportunity to

22   elect candidates of choice.

23   And, actually -- so that was District 6. The same

24   pattern is visible in District 24, where you can see that

08:43:04

25   the Black, Latino, and Asian CVAP has been pared back from

over 40 percent. It had grown to 40.8 with the

new -- with the demographic shifts at the time of the

census, and now it's pared back to 25. -- to 25.5.

So that's a steep drop in the minority share. And one

08:43:25 thing I noted in my report is that that drop of 15.3

percentage points in the minority demographics is paired

with only a 9 percent drop, 9.1, in the Biden share. And

I know that was a lot of numbers. The point is that's a

steeper demographic drop than it is a partisan drop. And

08:43:46 that's suggestive that race was used as a primary factor.

Q.   Did you -- and could you explain why that is in a

little bit more detail, why the difference in drops is

significant to you?

A.   Sure. One of the primary points I was trying to

08:44:02 understand in my analysis is the relationship between

demographic changes and partisan changes, in particular

whether partisanship -- whether partisan goals could

explain what is observed in terms of the demographic

changes.

08:44:17 And when you see a larger demographic shift than

partisan, that is suggestive that partisanship wasn't the

primary focus in terms of the numbers.

Q.   And did you -- just sticking with the Dallas and

Tarrant county areas, did you perform a similar analysis

08:44:38 with respect to the Senate maps or the Senate plan for

Laura Wells, RPR, RMR, CRR, RDR

1   Dallas and Tarrant counties?

2   **A.**   I did. So that would be the cluster called S1.

3   MR. STEINER: Okay. So could we look at

4   Exhibit 164. And again, the -- if we could just start

08:44:58 5   with the upper right and blow that up. This one, we can

6   probably deal with the colors even though they are not as

7   crisp as I would like.

8   BY MR. STEINER:

9   **Q.**   Could you explain what your visual observation showed

08:45:13 10   with respect to the Senate cluster in the same area.

11   **A.**   Yes. So these Senate districts all touch Tarrant and

12   Dallas, but you can see that many of them extend far out

13   into more rural counties.

14   If you focus on Senate Districts 9 and 10, which are

08:45:32 15   blue right in the middle and yellow, that starts in

16   Tarrant and extends out into the west and then south, what

17   you see is 10 has that same characteristic pattern of

18   submersion, where diverse population, in this case, in

19   Fort Worth, is being combined with rural counties to the

08:45:57 20   west and south.

21   Oh, look at that.

22   **Q.**   Look at that. A little bit clearer now.

23   So why don't we look -- and did you, then -- did you

24   do a dot-density analysis with respect to this as well?

08:46:14 25   **A.**   I did. And that's to the left.

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08:46:29

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08:47:32

1   MR. STEINER: So, Steve, if we can...

2   THE WITNESS: So, actually, one thing you can see

3 even this zoomed out is just how rural those counties are.

4 So here every dot represents 50 people. And there is a

5 stark contrast between the density in Tarrant and Dallas

6 and Denton with these counties to the west.

7   So that substantiates the observation that these are

8 taking slices or small pieces of the urban counties and

9 urban areas and combining them with rural counties that

10 can extend quite far away.

11 BY MR. STEINER:

12 **Q.** And did you --

13   MR. STEINER: If we can zoom in, then, on the

14 dot-density map, particularly along that line. So, Steve,

15 if you could zoom into Tarrant County, the -- well.

16   THE WITNESS: Well, okay. I can make some

17 observations here.

18 BY MR. STEINER:

19 **Q.** Okay.

20 **A.** So here we are seeing the District 9 and 10 boundary.

21 That's the blue and yellow. And then you see the same

22 thing overlaid on the dot density.

23   And so what is happening here, this is Tarrant County,

24 and, in particular, this is Fort Worth. And you can see

25 that a fairly diverse Latino and Black, and to some extent

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 1 Asian, community here which used to be entirely contained

 2 in Senate District 10 is now being split across Districts

 3 9 and 10.

 4 **Q.**   And you said part of this used to be contained -- or

08:47:50   5 was contained in 10, and now it's being split.

 6   Did you do the same type of analysis of the movements

 7 in and out?

 8 **A.**   Yes. We have a diagram of that kind.

 9 **Q.**   Okay.

08:48:00   10   MR. STEINER: And so, Steve, if we can look at

11 the Tarrant County -- the bottom left of the -- okay.

12 BY MR. STEINER:

13 **Q.**   So if you can explain here what we're seeing.

14 **A.**   Yes. If we zoom in on --

08:48:14   15 **Q.**   This is Senate District 10, right?

16 **A.**   Here we are looking at 10. That's right.

17   And if you zoom in on Tarrant on the left. That's the

18 county on the upper right. There we go. Yeah.

19   So this is -- this is what I mean. The benchmark

08:48:33   20 configuration used to contain more of Fort Worth. And

21 those areas have been excised from the district, and

22 instead the loss in population is compensated with the

23 rural counties that we discussed.

24 **Q.**   And this might be a little bit better example, just to

08:48:55   25 be able to explain to the Court the different colors while

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1 they are visible.

2 **A.**   Well, that's right. So just here in the green and

3 gray, that's what you mean, right?

4 **Q.**   Yeah.

08:49:04   5 **A.**   Yeah. So the brightest shade of green is new to the

6 district. The sort of darker shade of green is overlap

7 between new and old. And the gray areas were formerly in

8 the district but have now been removed.

9 **Q.**   And when you say the overlap between new and old, that

08:49:21   10 part of the district remained in the same?

11 **A.**   That part remained in the district. That's right.

12 **Q.**   And then -- and can you kind of explain from these

13 maps or observe from these maps what the characteristics

14 are, using the dot density map, of what has been taken out

08:49:41   15 of the district versus what has been added into the

16 district.

17 **A.**   Sure. So just to repeat, we have diverse areas in

18 Tarrant County that are now split between the districts,

19 while Whiter Johnson County is added, and several largely

08:49:58   20 White rural areas contained in this string of counties to

21 the west and south have been added.

22 **Q.**   And did you do the same overlay with respect to

23 District 9?

24 **A.**   Yes.

08:50:13   25   MR. STEINER: Okay. So if we could just look at

Laura Wells, RPR, RMR, CRR, RDR

08:50:54

08:51:02

08:51:10

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08:51:46

1 District 9 quickly. We should be on 164. Yep. That one.

2 Okay.

3   Can we put the dot density up to the right of it.

4   UNIDENTIFIED SPEAKER: I'm sorry, sir?

5   MR. STEINER: Could we put the dot density map up

6 to the right of it.

7   THE WITNESS: And maybe, again, zoomed in on

8 Tarrant.

9 BY MR. STEINER:

10 **Q.** Focus in on the same --

11 **A.** Right. Thank you.

12 **Q.** There we go?

13 **A.** So you see this pattern, that areas that cross the

14 Tarrant-Dallas County line that are more diverse, which

15 you can see in the dot density, have been removed, and

16 this much Whiter region that hugs the northwest corner of

17 the county has been added.

18 **Q.** And then aside from your visual examination, did you

19 put numbers to the results of these changes on the

20 demographics of Senate Districts 9 and 10?

21 **A.** I did. And we're going to hear this pattern over and

22 over. This is paring back minority population that has

23 risen into the 40s.

24   And so in Senate District 9, the CVAP -- the coalition

25 CVAP is pared back from 44.4 to 35 percent, and in Senate

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 1 District 10, from 47.1 to 38.1.

 2   So that's a pattern. In Texas, as we know, a lot of

 3 the population growth is in minority populations. So the

 4 benchmark configurations will have become more heavily

08:52:08 5 minority between censuses. And so you see this repeated

 6 pattern of taking districts that are in a zone that might

 7 be associated with opportunity to elect and paring them

 8 back into the 30s.

 9 **Q.**   Okay. And we'll try to do this quickly, but did you

08:52:24 10 also look at the House plans for Dallas and Tarrant

11 counties?

12 **A.**   I did.

13 **Q.**   Okay. So let's look at Tarrant first.

14   MR. STEINER: Exhibit 165, please, Steve.

08:52:32 15 BY MR. STEINER:

16 **Q.**   And why did you separate out Dallas and Tarrant in

17 your examination of the House plans, as opposed to looking

18 at them together as a cluster in the congressional and

19 Senate plans?

08:52:48 20 **A.**   Well, because in the State House, there is a

21 preference not to cross county lines, when possible. And

22 that was respected by the State. So Tarrant is neatly

23 divided up into districts, and so is Dallas. That's why I

24 was able, at the level of the State House, to treat each

08:53:03 25 of those counties as its own cluster.

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08:53:23

1   **Q.**   And did you make any observations with respect to the

2   House plan in Tarrant County?

3   **A.**   Well, the first thing we see from the colored

4   illustration of the districts is, again, that they are

5   highly non-compact.

6   And then if we focus on District 96 -- so that's on

7   the southern edge of the county -- we can see, especially

8   by comparing to the dot density, that that's taking

9   largely White areas and avoiding, sometimes with some

08:53:43 10   notable precision, the adjoining areas that are more

11   diverse.

12   **Q.**   And did you also examine the movement in and out of

13   that district?

14   **A.**   I did. And so you can see that here on the left in

08:53:57 15   green and gray. And so you can see what areas were

16   excluded. Particularly if you look over on the eastern

17   side, you can see -- you can match up the excluded areas

18   in gray, comparing with the dot density diagram. And you

19   can see that's precisely more heavily minority communities

08:54:16 20   that were removed from the district, while Whiter ones on

21   the western side are added.

22   Here I have also added the outline of the city of

23   Arlington to show that what's happened here is that the

24   district has taken more territory from Arlington. But if

08:54:34 25   you compare to the dot density, you'll see it's

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1 particularly White parts of Arlington that have been

2 added.

3   JUDGE SMITH: Now that we have the colors up

4 properly -- and this was -- you went over this yesterday,

08:54:45 5 but could you just remind us on the dots which color

6 represents what.

7   THE WITNESS: Yes. Absolutely. The lavender

8 color her is White people, non-Hispanic White. Green is

9 Hispanic or Latino. The yellow color is Black. And red

08:55:03 10 is Asian. And each of these pages does have a key on it.

11   JUDGE SMITH: Thank you.

12 BY MR. STEINER:

13 **Q.**   And just to focus back in, each dot is --

14 **A.**   50 people.

08:55:16 15 **Q.**   Okay. Not numbers of households or anything else.

16 It's numbers of people?

17 **A.**   Numbers of people from the census.

18 **Q.**   And did you, with respect to House District 1, draw

19 any conclusions about the impact that this design had on

08:55:34 20 the demographics in House District 96 and the surrounding

21 cluster of districts?

22 **A.**   I did. So we see the same pattern, that the

23 district -- the benchmark configuration had 44.4 percent

24 coalition population. And here I'll keep using the term

08:55:53 25 "coalition" to refer to Black, Hispanic, Asian, since that

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1   was the coalition active at the time of my report.

2   So from 44.4, it's been pared back to 36.1.

3   On here, I also noted that the terrain removed from

4   the district, which is divided up among four surrounding

08:56:13 5   districts, is done in such a way that each of the

6   districts that receives that more heavily minority

7   population is kept either below 30 percent or over 65. So

8   all of this is consistent with what we usually call

9   packing and cracking.

08:56:29 10   **Q.**   And I just want to ask a couple of things. Just so

11   the record is clear, when you talk about the coalition

12   that you were looking at, at the time, you know, the

13   Black, Latino, Asian populations, could you just explain

14   so the Court has it what the difference is between that

08:56:48 15   and either non-White or minority, just so it's clear to

16   the record.

17   **A.**   Sure. So Black, Latino, and Asian make up most of the

18   non-White population. But there are a few other census

19   categories. In particular Native American, American

08:57:05 20   Indian, and what the census calls "some other race" are

21   not included. And so those won't be pictured in these.

22   **Q.**   And does that -- do those differences have an impact

23   in the types of data that you are looking at?

24   **A.**   No. The differences are quite minor from the

08:57:19 25   perspective of this analysis.

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08:57:44

1 **Q.**   The -- now, you said that aside from kind of limiting

2 the growth of minority populations in District 96, it

3 either kept other -- other surrounding districts either

4 were still below 30 percent or, you said, above

5 65 percent?

6 **A.**   In this case.

7 **Q.**   What is the issue or problem with above 65 percent?

8 **A.**   So usually the term "packing" is used to refer to

9 adding to a population past the level that provides the

08:58:01

10 opportunity to elect. So adding minority population to a

11 district that's already over 65 percent would sometimes be

12 called wasted votes, from the perspective of opportunity

13 to elect.

14 **Q.**   And did you -- I think you said you did a similar

08:58:20

15 analysis in Dallas County; is that right?

16 **A.**   That's right.

17 **Q.**   So can we look at Exhibit 166, which is the House 2

18 cluster from your report. Okay.

19   And again, if you look at the top right map, the kind

08:58:35

20 of color map, could you explain what you see there.

21 **A.**   So here you see quite a number of House districts that

22 comprise Dallas County. Once again, fairly non-compact,

23 maybe not quite as low of scores as some of the others,

24 but still fairly striking.

08:58:53

25 **Q.**   Okay. And if we could focus in on House District 12,

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08:59:11

1 which is in the northeast corner of the county.

2 **A.**   112, yeah.

3 **Q.**   Yeah.   112.

4   Did you look at the -- that map compared to the dot

5 density?

6 **A.**   I did.   So 112 is this district that hugs the corner

7 of the county along its northeast side.   And if you look

8 at the dot density, it has an unmistakable pattern of

9 including White population, which, again, is what the

08:59:27   10 lavender dots represent, and avoiding concentrations of

11 Black, Latino, and Asian population.

12 **Q.**   And I think on the left of the blow-up that's now on

13 the screen is the movements in and out.

14   And so can you explain that with the areas on the dot

08:59:45   15 density.

16 **A.**   Sure.   You can see in particular this gray area that's

17 in the city of Garland.   If you compare that to the dot

18 density, you can see that that has excised quite a large

19 number of Asian and Latino voters.

09:00:04   20 **Q.**   Okay.   And did you look at the characteristics of the

21 two sort of light green or bright green areas that are

22 then added?

23 **A.**   Right.   And so what has been added, you can see, to

24 the south and the westernmost part are -- the southern

09:00:21   25 part is really not very populated, but what is at the

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1   northwest is heavily White.

2   **Q.**   And again, did you look at the demographic numbers and

3   the impact that this had with respect to the minority

4   population in 112 and/or the surrounding areas?

09:00:44   5   **A.**   I did. This was an extremely steep drop from a

6   benchmark configuration, which would have had 51.8 percent

7   coalition population. That's pared down to 33.3.

8   **Q.**   So by that, the benchmark in 2010 didn't necessarily

9   have 51 percent minority population; is that right?

09:01:05   10   **A.**   That's right.

11   **Q.**   Okay. So why is it that you use the 51 percent as a

12   comparator for the benchmark plan versus the resulting

13   enacted plan?

14   **A.**   Why is it a relevant comparator?

09:01:20   15   **Q.**   Yeah.

16   **A.**   Well, we think about district lines as being changed

17   relative to their previous configuration. Sometimes, in

18   fact, line drawers will use a principle of least change to

19   explain some of their choices. And so I think that's a

09:01:34   20   reasonable baseline for comparison.

21   **Q.**   And so the old District 112 had grown to surpass

22   50 percent, and it went down to 33; is that --

23   **A.**   That's correct.

24   **Q.**   Did you consider partisanship explanations there?

09:01:48   25   **A.**   I did. So we had an 18.5 percentage point drop in the

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1 coalition demographic share paired with less than a

2 5 percent drop in the Biden share. So here there is just

3 a huge gap, where it's a much starker demographic change

4 than it is a partisan change.

09:02:09   5 **Q.**   And again, to try and move through these a little

6 quickly, but I want to move away from Dallas-Fort Worth

7 and down to the Houston area in Harris and Fort Bend

8 Counties.

9   I think you called that, on the congressional side,

09:02:26 10 Congressional Cluster 2; is that right?

11 **A.**   Correct.

12   MR. STEINER: So can we look, Steve, at 167.

13 BY MR. STEINER:

14 **Q.**   So let's start, because we're new to this part of the

09:02:38 15 maps, with the color graph on the upper right. If you

16 could just focus in on the -- yeah. Okay.

17   And so can you explain again what observations you

18 made, just looking at the map to start with?

19 **A.**   Sure. And so you can see Harris County here, which

09:03:03 20 contains Houston, is kind of the central one in this

21 figure. And it -- the shapes are somewhat striking here.

22 There is a triangular shape in district -- I guess that's

23 District 29, surrounded by DISTRICT 18, that might be hard

24 to understand from this perspective but will become

09:03:24 25 clearer when we look at the dot density.

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 1          And then we see districts like 22 and 14 that

 2    encompass more of the kind of coastal and more rural

 3    areas.

 4    Q.   Right.  And I was going to ask.  I'm not from Texas,

 5    but I think most of the people in the courtroom probably

 6    know, but along the sort of southeast part of 22 and 14,

 7    that's -- water is the boundary?

 8    A.   Yeah, that's right.  That's coastal.

 9    Q.   And so you mentioned the dot density.  Can we just

10    take a look at the dot densities of these districts.

11    A.   Yeah.  So we'll need the full dot density here.

12          MR. STEINER:  All right.  Steve, can we just go

13    to the full.

14          THE WITNESS:  All right.  And now that triangular

15    pattern that I alluded to before, you can see that it's

16    explicitly separating Black from Latino population.

17    BY MR. STEINER:

18    Q.   That's sort of, like, right in the -- sort of like a

19    little bit above center of the map?

20    A.   Yes.  In that area, right.

21    Q.   And I think you said that was in District 29, with

22    District 18 surrounding it.  Is that --

23    A.   Yes.  I think that's right.

24    Q.   And now what can you tell me about -- I think you had

25    mentioned District 22, which kind of stretched out more to
```

09:03:37
09:03:56
09:04:12
09:04:24
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09:05:08

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09:05:48

09:06:04

09:06:28

1   the southwest, what observations did you make there?

2   **A.**   Sure. Well, we see parts of it in this figure that's

3   on screen now. So there is a boundary between Harris

4   County and Fort Bend, and the district is mostly on the

5   Fort Bend side. But you can see the way here the Black

6   district lines cut through what looks like particularly a

7   lot of Asian population. Here we're in the area of Sugar

8   Land, which I believe used to be whole before the

9   redistricting and is now cut up in the new configuration.

10   MR. STEINER: And so if we can just put up the

11   movement in and out with respect to District 22. Next

12   one.

13   BY MR. STEINER:

14   **Q.**   Okay. So can you explain using the overlay map what

15   we're seeing on the dot density?

16   **A.**   Right. And so that's -- the green and gray in Fort

17   Bend is showing you that pattern where the district

18   boundary has become more complicated, close to that

19   Harris-Fort Bend county line. And if you compare it to

20   what is on the right, you can see that a good deal of

21   color separation is happening here, which implies a kind

22   of race-conscious line drawing.

23   **Q.**   Okay. And did you investigate, kind of looking at the

24   data, what explanations there might be for those changes,

25   particularly with respect to minority populations

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1   before -- yeah, from the benchmark to the enacted?

2   **A.**   Yes.   Here, again, we have that District 22 had grown

3   to over 50 percent coalition population or CVAP,

4   particularly 54.7 percent in its benchmark configuration,

09:06:49 5   and was now dropped to 46.09.

6   **Q.**   So still close to 50 but below?

7   **A.**   But below.

8   And furthermore, the minority areas that were removed

9   from the district are split over five districts.   So

09:07:04 10   that's often thought of as cracking.   And every one of the

11   five districts that receives that population is maintained

12   at over 60 percent or under 40 percent.

13   **Q.**   Now, did you do a similar examination with respect to

14   the Senate plan in Harris and Fort Bend counties?

09:07:30 15   **A.**   Yes.

16   MR. STEINER: So if we could look at --

17   BY MR. STEINER:

18   **Q.**   And that's Senate Cluster 2; is that right?

19   **A.**   That's right.

09:07:37 20   MR. STEINER: If we could look at Exhibit 168.

21   Again, if we start just with the colored map of the

22   plan, if we focus in on that, Steve.

23   THE WITNESS: Yes.   So here you can see that same

24   triangular configuration that we noticed in the

09:07:56 25   congressional map.   And you can also see the pattern, in

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 1 Districts 17 and 18, of taking some population from urban

 2 counties and then stretching out to many surrounding

 3 counties.

 4 BY MR. STEINER:

09:08:09   5 **Q.**   Okay. And if -- I'd like to focus on your

 6 observations specifically with respect to Senate District

 7 17.

 8   MR. STEINER: And maybe we want to up the dot

 9 density next to it.

09:08:24   10 BY MR. STEINER:

11 **Q.**   If you need either of them focused in, just --

12 **A.**   No. Should I comment on this?

13 **Q.**   If you can. Looking at 17, which -- where it snakes

14 around.

09:08:42   15 **A.**   So 17 is particularly challenging to track. It

16 narrows so extremely and then winds through several

17 counties in a complicated fashion. So it will be hard to

18 track with your eye on the right. But if you do, you'll

19 see the pattern that I described, where urban and more

09:09:02   20 heavily denser and more heavily minority areas are

21 combined with Whiter rural counties to the south.

22   And, actually, if we zoom out on the dot density, we

23 can see the extent of that. Yeah. Actually, that's fine

24 the way it is. Okay. Great.

09:09:22   25   Yeah. So this substantiates the large disparity in

Laura Wells, RPR, RMR, CRR, RDR

1 density between the urban counties and these sort of more

2 coastal and rural areas.

3 BY MR. STEINER:

4 **Q.**   And then if we could focus in on the overlay of what

09:09:41   5 used to be Senate 17 and what was moved in and out.

6   Could you explain some of those areas that are

7 particularly -- Fort Bend, where it says Fort Bend.

8 **A.**   Sure. Yes. Well, first, just broadly about this

9 picture, I'll note that a principle of least change can't

09:10:04   10 explain the new configuration. A principle of pursuing

11 compactness can't explain it. A principle of respecting

12 county lines can't explain it. So if you go through the

13 traditional redistricting principles, it's hard to account

14 for this new configuration.

09:10:20   15   And then particularly in the area where it says the

16 word "Fort Bend," where that's printed, so that's an area

17 in the middle of the county in gray that was removed from

18 the district.

19   And we could compare that back to the dot density if

09:10:33   20 we wanted. Thank you. Maybe we could zoom in a little on

21 the dot density.

22   Right. And you can see that that's in

23 particular -- let me see. Make sure I have this right.

24   Yes. Right.

09:11:03   25   And so you can see that that's in particular an area

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09:11:28

09:11:45

09:12:10

09:12:20

09:12:36

1   with a lot of Black, Latino, and Asian population that's

2   been excised.

3   **Q.**   And did you draw any conclusions with respect to the

4   impact on demographics looking at the numbers with respect

5   to Senate District 17?

6   **A.**   I did. Here the effect is not as stark as some of the

7   ones we have just described, but it follows the same

8   pattern.

9   The coalition share was -- had grown to 48.4 percent

10   CVAP and was reduced to 43 percent. So not as stark but

11   in the same direction.

12   **Q.**   Okay. And then sticking with the Houston area and

13   Harris County, did you look at the House plan in Harris

14   County?

15   **A.**   Yes.

16   MR. STEINER: And if we could look at

17   Exhibit 164.

18   BY MR. STEINER:

19   **Q.**   Now, with respect to Harris County, is there a House

20   cluster for Harris County?

21   **A.**   I did not make a cluster for Harris County. And

22   that's because the clusters were part of the drawing of

23   *Gingles* alternative plans, and there were no *Gingles*

24   alternative plans here. So I've examined these two

25   districts but not as part of a cluster.

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1   **Q.**   And what observations did you make from your

2   examination of House District 126 and 132 that are

3   depicted here?

4   **A.**   Okay. Both of these we'll see the pattern again of

09:13:04   5   paring back. So House District 126, which is sort of at

6   the northern end of Houston, has its coalition CVAP

7   dropped from 55.6 to 44.9, a much more pronounced shift in

8   demographics than partisanship. And what is removed has a

9   77 percent minority share; so unmistakable pattern. And

09:13:30   10   that gets relocated into neighboring districts that end up

11   over 70 percent minority.

12   That's the pattern where excised areas that are

13   heavily minority tend to be placed in districts far from

14   the 50 percent line. That was 126.

09:13:49   15   132 is similar. It had risen to 53.6 percent and is

16   now steeply dropped to 41. The excluded territory goes

17   into two neighboring districts, both at 70 to 80 percent

18   minority.

19   **Q.**   Now, we'll return on the House map to the sort of

09:14:11   20   Dallas areas of Denton County.

21   Did you examine Denton County or Denton and Wise

22   Counties with respect to the House plan?

23   **A.**   I did.

24   **Q.**   Okay. And if we can look at Exhibit 170.

09:14:28   25   Now, again, why did you put Denton and Wise Counties

Laura Wells, RPR, RMR, CRR, RDR

1   together?

2   **A.**   Well, in this case, it wasn't true that Denton County

3   was made up of whole districts. You can see here that

4   District 64 contains part of Denton and all of Wise. And

09:14:42   5   so that's why I grouped them together.

6   **Q.**   So Denton needed more than four districts, and Wise

7   didn't take up its own. So together they took up five?

8   **A.**   That's right. Together they kept you within that

9   5 percent deviation from ideal size.

09:14:57   10   **Q.**   And is that something that you had decided, or is that

11   giving some deference to the State?

12   **A.**   Well, that's entirely deferring to the State's

13   districts.

14   **Q.**   And looking at the -- kind of the just color drawing

09:15:11   15   of the five districts, do you make any observations there?

16   **A.**   Yes. Well District 65, that's the one that has the

17   bridging shape. And so it goes all the way, the full

18   extent, from east to west of the entire county. And so

19   that does raise a flag that one might want to investigate

09:15:31   20   why it's bridging over what becomes District 63. And I

21   think we can see a possible answer to that from looking at

22   the dot density, which shows that that line is cutting

23   through the densest and most diverse part of the county.

24   **Q.**   And then did you also examine what had moved in and

09:15:57   25   out of District 64?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   This is District 65.

2   **Q.**   Sorry. District 65.

3   **A.**   Yes. You can see that here -- and I have marked the

4   boundaries of Lewisville and Carrollton, so that you can

09:16:13   5   see that Carrollton, which used to be kept whole in the

6   benchmark configuration, is now split, and Lewisville

7   continues to be split.

8   So we're cutting through those areas and bridging over

9   to the other side of the state, which is far

09:16:30   10   sparser -- excuse me, the other side of the county.

11   **Q.**   And did you investigate, looking at data, potential

12   explanations for these changes to the map?

13   **A.**   Yes, I did. So this is an area where it's not obvious

14   that there could have been a majority-minority district,

09:16:59   15   but the effect of this plan is that no district out of the

16   five gets even close. So whereas you would -- you might

17   expect to see a district over 40 percent, this is an

18   aggressive configuration that keeps them all below that

19   level.

09:17:16   20   **Q.**   Okay. And so now let's travel back to the Houston or

21   coastal area to Brazoria County, which I think you have

22   referred to as House district -- House Cluster 5 in your

23   report; is that right?

24   **A.**   Right.

09:17:31   25   **Q.**   Okay. Now, this only has two House districts. Why

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1   does that make it a cluster?

2   **A.**   Well, the two districts cover all of Brazoria County.

3   **Q.**   And so if you see kind of the middle picture there,

4   the blue and the yellow, that's just the drawing of how

09:17:49   5   those two maps look; is that right?

6   **A.**   That's right. That shows the district lines.

7   **Q.**   Okay. And did you look at any potential -- look at

8   the dot-density map with respect to potential racial

9   explanations for the drawing?

09:18:04   10   **A.**   Well, you can see in the dot density that at the north

11   it's kinds of cutting through diverse areas, actually,

12   heavily Latino, because you see that with the prevalence

13   of green in the -- in the coloring.

14   **Q.**   Okay. And that's the area that's closest up to

09:18:23   15   Houston; is that right?

16   **A.**   That's right. And --

17   **Q.**   Yeah. And I was just going to say if we can look at

18   the change from the prior -- from the prior plan, that's

19   something you had looked at?

09:18:32   20   **A.**   I did. And you can see here on the northern side that

21   Pearland and Manvel used to be whole and are now split by

22   the new configuration. So where that line cuts through a

23   lot of Latino population, it's also cutting through

24   municipal boundaries.

09:18:52   25   **Q.**   And did you, looking at the data, make any

Laura Wells, RPR, RMR, CRR, RDR

1   observations about what the specific numbers themselves

2   told us about this split or this movement?

3   **A.**   Yes.   Here I made the observation that a typical split

4   would be expected to produce, actually, a majority

09:19:12   5   coalition district. And so this is -- again, like the

6   previous one, I would characterize as fairly aggressively

7   avoiding the creation of a majority coalition district.

8   **Q.**   Okay. And just one more. Quickly, if we can look at

9   House District 54.

09:19:34   10   Okay. I think this is Bell County, if I remember

11   right.

12   **A.**   It is. It's Bell County.

13   **Q.**   Can you explain why you looked at House District 54 in

14   Bell County.

09:19:44   15   **A.**   Well, this has the very unusual doughnut district

16   configuration. While not prohibited, it's quite unusual

17   to have one district drawn around and completely enclosing

18   another.

19   So you see in the green and gray that it used to have

09:20:03   20   a bowtie-type shape and now has been redrawn to be

21   contained within Bell County. The red outline is the city

22   of Killeen, which is of an appropriate size to anchor its

23   own district, and instead it's just split by the way the

24   line is drawn.

09:20:25   25   **Q.**   And now I want to shift focus from looking at the maps

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09:20:50

1   to looking at a little bit more of what you do or what

2   your innovation that you described with respect to

3   creating a large dataset of ensembles.

4   Did you do that work in connection with what we've

5   seen visually from the maps?

6   **A.**   I did. And in each of the eight clusters, I created

7   an ensemble of 100,000 districting plans that redraw the

8   internal lines while respecting the State's outer

9   boundaries.

09:21:06

10   **Q.**   And could you just give a little bit more of an

11   explanation. I know we went over some of this yesterday,

12   but for probably everyone in the room except you, it's

13   complicated. So just to make sure that we're focused on

14   it, could you explain how the algorithms work or what you

09:21:22

15   do to create algorithm to draw these ensembles or to

16   create these ensembles.

17   **A.**   Yes. So, first, I'm using what is called a Markov

18   chain approach, which is literally also synonymously

19   described as a random walk through the space of possible

09:21:40

20   districting plans.

21   So you start with a plan. You change it to a

22   neighboring plan in a certain sense that I'll describe.

23   And then you keep on randomly walking to neighbors through

24   this vast space of possibilities.

09:21:52

25   One thing I kind of want to emphasize at the outset is

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09:22:12

1 just how many possibilities there are. So we're not

2 talking about thousands of possible plans that would be

3 legally reasonable. Not millions or trillions. But

4 something more like a googol, the 1 with 100 zeroes. I

5 mean, we're talking about vast spaces of plans.

6   So this applies a statistics technique called MCMC or

7 Markov chain Monte Carlo. It was developed in Los Alamos

8 for statistical physics as a way to understand nuclear

9 reactions. And what it does is it lets you efficiently

09:22:31

10 explore -- even though the space is so vast that you can't

11 enumerate all the possibilities, you can generate

12 representative samples in an efficient time.

13 **Q.**   And are the things that you do to -- when you, say,

14 create 100,000, to say do I have a representative sample,

09:22:47

15 are there types of -- I'll say, safety checks, but, yeah

16 things that you do to make sure, like --

17 **A.**   Yes.

18 **Q.**   -- that I have enough?

19 **A.**   Yes. So this is sometimes called diagnostics. So you

09:22:58

20 can't be sure that you've got a great sample because you

21 haven't seen the whole universe of possibilities. So you

22 want to run some diagnostics to be sure that you have an

23 adequate sample.

24   You both need to run for long enough that you are

09:23:14

25 exploring effectively, and you need to offer enough plans

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1 that you can do reasonable statistics on the plans.

2   And so I'll give maybe a few examples of good kind of

3 scientific best practices. I'll just mention there is a

4 multi-start heuristic and then sensitivity analysis.

09:23:31   5   Let me --

6 **Q.**   So let's start with explaining the multi-start.

7 **A.**   Sure. Right. So since you are taking a random walk,

8 you can worry that it might matter where you began it,

9 right? If you weren't running for long enough, that you

09:23:45 10 might just be exploring a small neighborhood in the space

11 of possibilities.

12   Multi-start means I start in one place and I take

13 100,000 steps. I start in a different starting point and

14 take 100,000 steps. And I confirm that the aggregate

09:24:01 15 statistics that I collect are the same no matter where I

16 started. That's a very standard, imperfect, but widely

17 used diagnostic to show that you are sampling well.

18 **Q.**   And you mention, I think, sensitivity. Could you

19 explain what that is.

09:24:16 20 **A.**   That's extremely important. When you are doing

21 redistricting sampling -- and I should mention, this is

22 the same kind of technique that others refer to as

23 "simulations," but I really resist using that language

24 because we're not making simulated plans. We're sampling

09:24:33 25 real, viable plans.

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1   And I avoid the term "simulation" also because it

2 makes it sound like you are trying to make a computer

3 simulate human judgment. That's not what you are doing.

4 You are trying to create a sample of alternatives, right.

09:24:48   5   So in the process of making these samples, it's

6 extremely important to check that the ways you've

7 operationalized redistricting principles aren't skewing

8 your results. So a sensitivity analysis or a robustness

9 check might say, if I made some arbitrary-sounding

09:25:09   10 decisions in how I set this up, I'm going to then change

11 those, turn the knobs, alter the parameters, and make sure

12 that my conclusions are robust.

13   And so an example here would be when I ran the Markov

14 chains to sample congressional plans, I allowed a

09:25:30   15 1 percent population deviation from ideal along the way of

16 the run. And we all know that ultimately an enacted

17 Congressional Plan probably wants to have much tighter

18 deviation, maybe one person, not 1 percent.

19   So the reason to run it at 1 percent is to let the

09:25:47   20 chain explore more fully, but then I needed to check that

21 that 1 percent wasn't skewing my results. So I reran with

22 1 percent, 2 percent, half a percent, and so on, and got

23 consonant results all the way across. That's an example

24 of sensitivity analysis.

09:26:03   25 Q. And, now, you said that the plans -- just talking

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09:26:26

1   about the congressional plans for a minute, where you have

2   to have down-to-the-person numerical districts, why -- why

3   is it that a plan set with a 1 percent deviation -- or the

4   algorithm set with a 1 percent deviation producing 100,000

5   plans, that that is acceptable when ultimately the plans

6   will have to have to-the-person or within-a-person

7   deviations?

8   **A.**   Right. A few ways to explain that. One, I largely

9   ran these ensembles using whole precincts. And so we

09:26:43

10   wouldn't expect those to get down to a person.

11   But a human mapmaker, which I also am, can tune those

12   plans to one-person deviation extremely efficiently

13   without changing their gross properties.

14   So in most states, you could do that in under ten

09:26:58

15   minutes. Texas is large, and so I would say tuning a

16   Texas plan by an expert could be easily done in under an

17   hour without changing the gross properties of the plan.

18   So that's why I find that the sampling technique is

19   still extremely informative.

09:27:15

20   I'll just mention quickly, another robustness check

21   that I did, instead of just running on precincts, I also

22   ran on census blocks. The computational techniques we

23   use, recently my lab has produced techniques now that are

24   powerful enough to run on blocks. And so I confirmed that

09:27:32

25   that doesn't change any of the findings either.

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1   **Q.**   The -- and when you create a -- "universal" won't be

2   the right word. When you create a sample or an ensemble

3   of 100,000 plans, what you, then, do with the enacted plan

4   vis-à-vis those plans?

09:27:53   5   **A.**   I used the ensemble as a comparator. So if I see

6   signs, like, for instance, elevated and depressed minority

7   population, that pattern of being 70 percent to

8   30 percent, say, the power of the ensemble method is to

9   disentangle the observation from what could have been,

09:28:15   10   right.

11   And so a possible explanation is it's simply the

12   political geography -- the human geography and the

13   political geography of Texas that's causing concentration

14   and dispersion. But what we have here is an ensemble of

09:28:32   15   alternatives that are compact, contiguous,

16   population-balanced, and where you can layer in all the

17   other traditional redistricting principles that don't have

18   that racial signature of packing and cracking. And that's

19   why it's a fairly powerful technique. It takes into

09:28:45   20   accounts the rules, priorities, human geography, and

21   political geography.

22   **Q.**   And is there a visual way of presenting data -- when

23   you are talking about 100,000 in each area, is there a

24   commonly used visual way of presenting that?

09:29:01   25   **A.**   There are several, but I think maybe the one you'll

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09:29:25

09:29:37

09:29:52

09:30:10

09:30:29

1   see most is box plots or box-and-whisker plots.

2   **Q.**   And so I'd like to -- this is in page 61 of your

3   initial report, Exhibit 136. But we have kind of

4   higher-resolution versions of these.

5   MR. STEINER: And so, Steve, I think it might be

6   173.

7   BY MR. STEINER:

8   **Q.**   So if we look -- can you just explain -- just starting

9   with, is this a box-and-whisker diagram?

10   **A.**   Yes, it is. This is a box plot.

11   **Q.**   Okay. And can you explain to everyone -- most of us

12   will need a tutorial on what this is and what it depicts.

13   **A.**   Sure. I'll be brief.

14   Here is what is happening. This is Congressional

15   Cluster 1. So this is seven districts in a cluster. And

16   what I have done is I have taken the coalition CVAP share

17   in the State's enacted map, and that's what you see as

18   blue dots. So you see these two districts over 70 percent

19   and then a drop to just over 50 and then a drop to 40 and

20   so on. So the blue dots are the State's plan.

21   Then what I have done is I have taken the 100,000

22   alternative plans. And in each of those, that's

23   just -- they don't come with district numbers. Like, I

24   can't point and say, this is CD-6, right. This is CD-22,

25   CD-24.

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        1        And so what I have done with those alternative plans

        2   is I have just organized their districts the same way,

        3   from the lowest coalition CVAP share to the highest.

        4        So let's focus on that column marked 7, the right-most

09:30:43 5   column.  What you are seeing in the box-and-whiskers is

        6   the whiskers take you from the 1st percentile to the 99th

        7   percentile of observations.  The box goes from the

        8   quartiles, from the 25th to the 75th percentile.  And the

        9   stripe in the middle, that's the median or 50th

09:31:02 10  percentile.

        11       So the way to read this is that across my 100,000

        12  plans, the median or the 50th percentile level of

        13  coalition CVAP in the highest minority district looks like

        14  it's about 76 percent.  And so that -- some of that, what

09:31:20 15  some have called, like, natural packing.  That is just

        16  because of where people live, that you should expect one

        17  district with such high minority CVAP.

        18       And I'll emphasize the box, because it goes from 25th

        19  to 75th percentile, that contains 50 percent of the plans.

09:31:38 20  So the State's plan here falls in the box.  It's not that

        21  unusual.  There is nothing -- there is no red flag there.

        22  Q.  Okay.  I just want to make sure.  So if we're talking

        23  about the Column 7.  So of the 100,000 maps that will be

        24  generated in your ensemble, a thousand of them would have

09:32:00 25  minority populations above that kind of top little
```

1 whisker, which is very close between the 1 percent and the

2 25 percent.

3   Why is that?

4 **A.**   Why are they so close?

09:32:11 5 **Q.**   Yeah.

6 **A.**   That's seeing that a large number of plans, 24,000 of

7 them, had almost the same top CVAP of it looks like about

8 82 percent.

9 **Q.**   So a thousand would be above that. 24,000 would be

09:32:23 10 from that top whisker to the box. And then same thing,

11 50,000 in the box, 24,000 from the bottom of the box to

12 the bottom whisker, and a thousand below?

13 **A.**   Yeah. Only a thousand below. I agree.

14 **Q.**   And so what does -- so when you -- why do you look at

09:32:43 15 kind of all seven districts in the cluster together in the

16 box plot, as opposed to looking kind of one by one?

17 **A.**   Right. So here you really want this holistic view of

18 the seven districts together, not the whole state, but

19 just this cluster, because when you make changes to one,

09:33:02 20 it necessarily changes the neighbors. There is a fixed

21 sum of minority population in this area. So when you

22 raise it in one, you lower it in another. And this is

23 showing you those compensating effects.

24 **Q.**   And now if we can move over a column to Column 6, can

09:33:26 25 you tell me what we're seeing there and why you have a red

 1   box.

 2   **A.**   Sure. So whereas in Column 7 the elevated minority

 3   CVAP was typical of alternatives, that's not what we see

 4   in Column 6. So if we look at the second highest minority

09:33:43   5   share, the -- what the top whisker is showing you is that

 6   99 percent of plans had less than about 72 percent,

 7   whereas the State's plan looks like about 75. It's so far

 8   off the whiskers that it's likely -- and, of course, one

 9   could check this in the backup data, but it's likely that

09:34:03   10   not a single plan out of 100,000 had such a high level of

 11   minorities in its second highest district. So I have

 12   circled that in red as an indicator of possible packing

 13   because we don't expect to see that elevated of a level in

 14   the comparison plans.

09:34:21   15   And I'll just emphasize, I'm calling it an indicator

 16   of packing when you are above the ensemble at a level

 17   that's already over 50 percent. All right. So you are

 18   already over 50 percent but are further elevated. That's

 19   what I'm calling an indicator of packing.

09:34:41   20   By contrast, what I have circled in orange, that's

 21   what I'm calling indicators of cracking. That's not just

 22   being at or near the bottom of the ensemble, but it's a

 23   case where a typical plan might have been

 24   majority-minority or in a very near to that opportunity

09:34:58   25   zone, and instead you have a depressed minority share in

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09:35:17

09:35:36

09:35:56

09:36:15

09:36:34

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 1  that district.
 2  Q.   Okay.  And then did you do this for the other clusters
 3  that you looked at?
 4  A.   I did the same analysis for all 8.
 5  Q.   So let's look at -- I think, the Senate cluster from
 6  Senate Cluster 1, also from Tarrant and Dallas, I believe
 7  is page 7 of this.
 8  A.   Yes.  That looks like.
 9  Q.   I'll ask Steve, but maybe you can confirm.
10  A.   Yes.  Yes, I think that's right.  Here.  I'll
11  double-check.  Yes, that's the right picture.
12  Q.   Okay.  And so, again, can you explain what we're
13  seeing here and particularly the Columns 5 and 6.
14  A.   Sure.  In this cluster, I am not seeing any red flags
15  of packing, but I do see two districts that look clearly
16  cracked from the point of view of this analysis.
17       So the one marked 6, the sixth column, nearly
18  25 percent of the plans were majority-minority, and
19  instead, the State's plan is so low it's off the bottom
20  whisker.  So never seen in 100,000 alternatives.
21  Q.   And then the one next to it, 5, that's also either
22  kind of right on or a little below the whiskers?
23  A.   That's below the whisker.  So it's possible that a few
24  plans are as depressed in the minority share, but not
25  many.
```

1   **Q.**   And then just likewise, if we can look at -- I think

2   is it page 3 of this -- I believe that that is the

3   Tarrant -- is the Tarrant County; is that right?

4   **A.**   I can confirm that's Tarrant County.

09:37:01   5   **Q.**   And so, again, can you explain what you are observing

6   here in Tarrant County.

7   **A.**   So I think, hopefully, by now, the signs are clear.

8   You have two districts that show up with clear indicia of

9   packing and two with cracking.

09:37:20   10   **Q.**   Okay. And how does that compare to what we observed

11   when we are looking at the maps and the dot density and

12   the, you know, movements in and out?

13   **A.**   Right. And so this shows that the effect of those

14   unusually shaped boundaries is also racially quite unusual

09:37:41   15   against a batch of comparators.

16   **Q.**   And if we just look at the Dallas House plan, which I

17   think is -- I want to say it's House 2, but I think it's

18   Slide 4 in this setup?

19   **A.**   Yes. That's correct.

09:37:56   20   **Q.**   And what observations do you have here?

21   **A.**   Packing and cracking.

22   Notice, please, though, that in Column 5, you also see

23   a dot that's well above the whiskers. I haven't called

24   that packing because, again, I'm only isolating those

09:38:13   25   instances that were already well above 50 percent and are

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1 further elevated. Those are the ones that I'm indicating

2 as signs of packing.

3 **Q.**   Got it.

4   But the middle two, the 5 and 6?

09:38:25 5 **A.**   5 and 6 are elevated, but I would not call that

6 packing because that's close to 50 percent.

7 **Q.**   The district without it is close to 50 percent?

8 **A.**   Both the district without it, and it's been elevated

9 but not over 60.

09:38:40 10 **Q.**   Got it.

11   And then did you do the same thing with the Houston

12 area maps?

13 **A.**   Yes.

14 **Q.**   So if we can up go to page 2 of these slides.

09:38:51 15   This is the Congressional Cluster 2 in Harris and Fort

16 Bend counties; is that right?

17 **A.**   Yes, it is.

18 **Q.**   Okay. And observations here?

19 **A.**   Very clear. Totally far from the whiskers. Highly

09:39:07 20 unusual pattern consistent with packing and cracking.

21 **Q.**   So two are packed, two are cracked?

22 **A.**   Yes. The ones in the sixth and seventh columns are

23 packed, and the ones -- or show signs of packing, and the

24 ones in Columns 3 and 4 are very distinctly cracked.

09:39:23 25 **Q.**   And I believe Senate -- I believe the Harris and Fort

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1   Bend is Senate Cluster 2, which I think is Slide 8 in this

2   exhibit.

3   **A.**   Yes. Packing in the fourth column, cracking in the

4   second, where it's actually quite hard to get below

09:39:42   5   50 percent, and yet that's how the plan came out.

6   **Q.**   And then just the last couple of House areas.

7   MR. STEINER: If we could go to page -- Slide 5

8   of this exhibit, Steve.

9   BY MR. STEINER:

09:39:57   10   **Q.**   I believe this is The House Cluster 3, the Denton and

11   Wise; is that right?

12   **A.**   It's right. Yes.

13   **Q.**   And so what are you observing here?

14   **A.**   Right. So remember, when we looked at Denton, that

09:40:10   15   was that bridging district that spanned the county east to

16   west. And I said it looked like it had been aggressively

17   reduced in its coalition share.

18   This substantiates that. We'd really expect from this

19   kind of neutral process to see something over 40 percent.

09:40:26   20   That happened, it looks like, 100 percent of the time, all

21   100,000 plans. And here we see a big gap to about

22   36 percent, which is where the enacted plan sits.

23   **Q.**   And that's the case, even though none of the 5

24   districts out of the 100,000 ensembles, you wouldn't

09:40:44   25   expect any to get to 50 percent.

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1   Why is that still significant?

2 **A.** Well, here we're looking for signs that show that race

3 was used in a diluted fashion. And here a district that's

4 in the upper 40s might provide opportunity to elect, and

09:41:02   5 that's much less likely at 36 percent.

6 **Q.** And then the last one, which I think was the Brazoria

7 County split. So that's Slide 6 here. So there is only

8 two. So if you can just take a minute to explain what

9 this map shows.

09:41:16 10 **A.** Sure. Absolutely.

11   So if you remember, in Brazoria, that was where we

12 were cutting through urban areas in the north part of the

13 county and then slicing sort of in a north-to-south

14 fashion.

09:41:29 15   What you see here is the bulk -- looks like well over

16 75 percent of plans -- actually, I would probably estimate

17 that to be 80, even 90 percent of plans, are

18 majority-minority in one of the two districts.

19   And what the State's plan has done is taken the

09:41:50 20 minority population of the whole county and cut it in

21 half. So that's why you see these blue dots are nearly

22 equal. And that's statistically quite unlikely if you

23 weren't using race to do so.

24 **Q.** And the -- do you understand that one of the State's

09:42:12 25 explanations or responses is that these numbers that we

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1 have seen and the kind of carving of the maps that we have

2 seen wasn't because of race. It was done because of

3 politics?

4 **A.** Yes.

09:42:26 5 **Q.** You are aware of that kind of response to your initial

6 report; is that right?

7 **A.** That's right.

8 **Q.** Okay. And -- by the way, have you -- in your

9 professional work, have you kind of observed or noticed

09:42:52 10 people using race as a proxy for politics or using race as

11 a way to get to politics in drawing maps? Is that

12 something that you've experienced?

13 **A.** Yes. I have seen that. And it's a well-known

14 practice, particularly in places with high polarization,

09:43:11 15 to use race as a proxy for political preference.

16 **Q.** Okay. And is there a reason that you've observed

17 people doing that?

18 **A.** In other words, why use race and not go for

19 partisan --

09:43:24 20 **Q.** And not use it, right?

21 **A.** Yes. Okay. There are a few reasons why you might do

22 that. But a principal one is that raw electoral data

23 exists at the precinct level. Race data from the census

24 goes down do the block level.

09:43:43 25   I have examined -- I got my data from the TLC, the

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09:44:00

1   Texas Legislative Council, as I assume the line drawers

2   did as well. And I reviewed what the TLC said about their

3   preparation of electoral data. What they say is that they

4   take that precinct-level electoral data, and they allocate

5   it to blocks. But without a description of an allocation

6   formula, what an expert would clearly understand that to

7   mean is that it's just proportionately prorated to the

8   blocks.

9   And that means electoral data isn't as fine-grained.

09:44:14 10   That's not giving you any real information at the

11   sub-precinct level.

12   So that's one reason that people often use race. It's

13   visible and easily acquired data that sometimes tracks

14   with party vote, certainly not perfectly, especially in

09:44:31 15   Texas, and is more granular.

16   **Q.**   And that is not something that you do in creating

17   these ensembles, is that --

18   **A.**   Certainly not. These ensembles are what others

19   sometimes call race-blind and partisan-blind. These

09:44:50 20   ensembles aren't made with any racial or partisan data.

21   **Q.**   So did the ensembles that you created enable you to

22   consider whether what was actually going on here was

23   politics and not race?

24   **A.**   Yes. So I get to that in my response report, which

09:45:08 25   was the third report that I filed.

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Q.   Okay. So why don't we look at -- I think it's

Exhibit 138. And blow up -- I think if we go to page 14.

     Okay. And is this what you are referring to?

A.   Yes. I think this table is the most succinct way to

present the findings.

Q.   So you went back -- now the data that you looked at in

preparing your response report and the findings, that's

the same data that was provided with your initial report;

is that right?

A.   This is based on the exact same ensemble data and

process in the initial report.

Q.   And the State's experts had that available to consider

whether partisanship could be disassociated with race in

the ensemble maps? Is that --

A.   That's right. I provided all replication materials.

Q.   And so when you went back to try and consider whether

partisanship could explain what we've observed in the maps

and in the box-and-whiskers, what did you do?

A.   Okay. So I do a fair amount of work trying to

disentangle race and party. One thing you could do is

make a new ensemble that's targeting more partisanship,

but I didn't have to do that here.

     I was able to take the original ensembles and just

restrict to the maps that are as partisan as the enacted

map. And I operationalize that in two ways. And you can

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1   see that in these two columns.

2   One is I just counted the number of districts that

3   would have been won by Trump in his race against Biden in

4   2020. So look at C1, for instance, and recall that there

09:47:02   5   are seven districts there. You ask how many of those did

6   Trump have more votes than Biden. I think the answer is

7   three out of seven. And then I restrict to just the

8   random plans in which at least three districts, possibly

9   more, would have been won by Trump.

09:47:17   10   So that's what I mean by at least as Trump-favoring.

11   Does that make sense?

12   **Q.**   Can you explain what at least as Republican-favoring

13   means?

14   **A.**   Sure. So might you might not think that Trump-Biden

09:47:31   15   contest is the best proxy for baseline partisanship. So I

16   also took a mix of 19 general elections as the

17   Republican-favoring collection.

18   And so what I did was you have 19 general elections

19   across those seven districts. And that's like -- it's 133

09:47:50   20   contests in districts. And then you ask how many of those

21   would have been won by the Republican.

22   So the State's plan has a certain number of Republican

23   wins out of 133, and then I restrict to the plans that

24   have at least that many Republican wins.

09:48:06   25   So that's a way of saying maybe Trump is not a typical

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09:48:24

09:48:45

09:49:03

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09:49:31

1   candidate in these areas. I'll take a mix of all these

2   other Republican candidates and use that as a kind of

3   index.

4   **Q.**   And so putting numbers to it, if we just start looking

5   at congressional district -- sorry, not congressional

6   district -- Congressional Cluster 1, which is, again, the

7   Dallas and Tarrant County cluster, you had 100,000 in the

8   full cluster.

9   What does that mean to say 12,000 were at least as

10   Trump-favoring?

11   **A.**   Right. So that means, if I'm recalling correctly,

12   that there were three Trump districts in the enacted plan.

13   12,427 of my ensemble had three or more Trump districts.

14   **Q.**   And the 29,000 at least as Republican-favoring, what

15   is that?

16   **A.**   That's right. At least as many Republican district

17   wins.

18   **Q.**   And looking at those numbers, does that tell you

19   anything about the ability to draw a plan that's as

20   partisan focused as the plan that the State drew without

21   having these -- the racial characteristics of the plan

22   that they, in fact, drew?

23   **A.**   Right here is how you compare the racial

24   characteristics. So if you look at these percentages, I'm

25   asking what share of random plans were as extreme as the

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09:49:45

1   State? And in this particular case, I'm looking at the

2   cracking. You could have done the same thing for packing,

3   but I've focused on cracking here.

4   So I look at the ones with low minority CVAP, and I

5   ask how many of the ensemble were at least as low?

6   And so you can see in those first two -- in C1, only

7   3.7 percent were as low in CD-6; only 1.55 percent were as

8   low in the column corresponding to CD-12.

9   What struck me -- I have to say this was surprising.

09:50:06 10   I expected when restricting to the partisan comparators

11   for those numbers to grow somewhat. Maybe something that

12   was a 1 percent outlier would become a 10 percent outlier.

13   That is just not what I found. I found when comparing

14   to the partisan plans, the results were just as extreme,

09:50:23 15   and sometimes even more extreme. And that's how I

16   concluded that partisanship couldn't explain their extreme

17   packing and cracking pattern.

18   **Q.**   And then, again, if we talk about Congressional

19   Cluster 2, which is the Harris and Fort Bend cluster,

09:50:43 20   could you just explain those numbers.

21   **A.**   Sure. So of the 100,000, in particular, nearly three

22   quarters were at least Republican at least as

23   Republican-favoring. So if this was a partisan

24   gerrymander, then by these lines, it left a lot on the

09:50:59 25   table.

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1   And if you compare to those what was a .05 percent

2 outlier, so extremely cracked, becomes a .06 percent

3 outlier. So that partisanship does not seem -- again, let

4 me try to be sure I'm being clear.

09:51:13   5   If having to be partisan is what brought on those

6 racial characteristics, then something that looked like an

7 outlier would start to look typical. So if partisanship

8 were really an explanation, we would expect these

9 percentages to be 50 percent, 40 percent, be something

09:51:29   10 more in the middle of the road among the partisan

11 comparators.

12   But I found that among things that were in some cases

13 even significantly more Republican-favoring that the

14 racial skew was still enormously outlying.

09:51:45   15 **Q.**   All right. So just on Congressional District 2, just

16 to make sure I understand the numbers, so of the 100,000,

17 if you look at the Republican-favoring, 74 percent of

18 them, 74,000 of them that you gave the State with your

19 materials in April of 2022 --

09:52:02   20 **A.**   May.

21 **Q.**   -- May of '22 were created maps that were at least as

22 partisan as the maps that the State was seeking to create;

23 is that right?

24 **A.**   That's right.

09:52:12   25   And to be clear -- that's Cluster 2, by the way. You

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1 said District 2.

2 **Q.** Sorry. Cluster 2.

3 **A.** To be clear, the State might have its own proxy for

4 partisanship. But I think that by focusing on Trump in

09:52:25 5 one case and a variety of Republicans in another, I think

6 this is a pretty clear indicator of trends when it comes

7 to partisan performance.

8 **Q.** And the State's map on the Republican-favoring

9 partisanship, for your analysis that .06, I think that's

09:52:43 10 about 40 -- I think I used a calculator and got 44 maps.

11 So this would be the bottom 44 maps out of the 74,000

12 possibilities that you presented to the State?

13 **A.** That's right. To be as cracked only happened 44 times

14 out of 74,000.

09:53:02 15 **Q.** And we don't need to go through every row here, right?

16 I just want to jump down to House Cluster 5, which I think

17 is the Brazoria County cluster. So still sort of Houston

18 area.

19   There, on whether it's Trump-favoring or it's

09:53:23 20 Republican-favoring, about half of the maps that you

21 presented in either case would be as favoring, whichever

22 proxy you use; is that right?

23 **A.** That's right. It's about half.

24 **Q.** And this is a district where you would expect usually

09:53:38 25 to have one minority-majority district?

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1   **A.**   Correct.

2   **Q.**   Okay. What observations did you make -- or sorry.

3   What results did you get in terms of how the State's plan

4   there compared to, you know, the roughly 50 percent of the

09:53:58   5   plans that you provided that would have been at least as

6   partisan gerrymandering -- or produced at least as

7   partisan a result?

8   **A.**   Yes. Compared to even the ones that are as partisan

9   or more favorable to Republicans, you still have about a 1

09:54:20   10   1/2 percent outlier in the depressed racial makeup.

11   **Q.**   And having done all of this work and examined the

12   data, did you form conclusions as to what this data

13   provides evidence of?

14   **A.**   Yes. My conclusion is that this shows us pretty

09:54:36   15   clearly that race was used -- it suggests strongly that

16   race was used, and it was used in a manner that's dilutive

17   in a way that is not explained by partisan goals.

18   MR. STEINER: No further questions.

19   JUDGE GUADERRAMA: Mr. Kercher.

09:54:56   20   **CROSS-EXAMINATION**

21   BY MR. KERCHER:

22   **Q.**   Good morning, Dr. Duchin.

23   **A.**   Hi.

24   **Q.**   My name is Ryan Kercher. I work for the Texas

09:55:12   25   Attorney General's office.

Laura Wells, RPR, RMR, CRR, RDR

1   I want to start by telling you this is not going to be

2   a fair fight. I am an avowed technophobe. I make my

3   children turn the television on for me. So if I describe

4   what you have done and what you understand in somewhat

09:55:30   5   crude terms, please understand it is a reflection on me

6   and my limitations and is not intended to diminuate what

7   you have done, okay?

8   **A.**   Okay.

9   **Q.**   To learn about redistricting in Texas, you looked at

09:55:43   10   the Texas redistricting guidelines, right?

11   **A.**   Among other materials, yes.

12   **Q.**   And without making you into a lawyer, you understand

13   that those guidelines generally walk through some of the

14   legal requirements for district drawing in Texas, right?

09:55:58   15   **A.**   Right.

16   **Q.**   So, for example, a Texas redistricting peculiarity is

17   the county-line rule, right?

18   **A.**   Yes.

19   **Q.**   And those guidelines walk through the county-line

09:56:08   20   rule, right?

21   **A.**   Yes.

22   **Q.**   The guidelines don't tell you about all of the

23   peculiarities and particularities that may matter to

24   individual incumbents involved in the redistricting

09:56:19   25   process, right?

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1 **A.**   Correct.

2 **Q.**   So of like the pirate code in *Pirates of the*

3 *Caribbean*, their guidelines, right?

4 **A.**   I hate to say it, but I'm not familiar.

09:56:31 5 **Q.**   Okay. After the trial is over, Dr. Duchin, you and

6 me.

7 **A.**   Okay.

8 **Q.**   You know that there are something like 181 Texas

9 legislators, right?

09:56:44 10 **A.**   Sure. Uh-huh.

11 **Q.**   And each one will show up to the redistricting process

12 with his or her own individual goals about what his or her

13 district will look like or area will look like, right?

14 **A.**   Yes.

09:56:56 15 **Q.**   And sometimes --

16 **A.**   To be clear, when I say yes, that would be consistent

17 with practice elsewhere.

18 **Q.**   And it can be as strange and unique as a particular

19 legislator may want her elementary school drawn into her

09:57:11 20 district, right?

21 **A.**   Or grandma's house.

22 **Q.**   Or if dad is a preacher, may want dad's congregation

23 in her district, right?

24 **A.**   Absolutely.

09:57:24 25 **Q.**   There are less idiosyncratic preferences, though. We

09:57:38

1 have heard about economic engines that members may want to

2 have in their district, right?

3 **A.**   Yes. Economic considerations can drive the drawing of

4 lines.

5 **Q.**   And we have heard testimony, for example, from

6 incumbent legislators who have spent the last decade, from

7 2010 to 2020, under the lines they are used to, trying to

8 cultivate certain industries, logistics, and so forth.

9 Those kinds of considerations may matter to legislators?

09:57:54 10 **A.**   I have seen such things.

11 **Q.**   And, of course, there are cultural and community

12 considerations, too, right?

13 **A.**   Are you asking about Texas specifically or generally?

14 **Q.**   Well, let's just talk generally first.

09:58:11 15 **A.**   Definitely.

16 **Q.**   And to be sure, Texas has its own culture and

17 community, right?

18 **A.**   It certainly does.

19 **Q.**   We may look at a cluster of towns and -- or a cluster

09:58:24 20 of counties in rural Texas, and they may all look more or

21 less the same. But if you grow up in Walker County, you

22 know that as soon as you get to Grimes County, the

23 farm-to-market roads used out there degrade significantly,

24 right?

09:58:41 25 **A.**   That sounds reasonable.

1 **Q.** So it's hard to know what kinds of communities there

2 are without conducting an intensely local appraisal, fair

3 to say?

4 **A.** Yes.

09:58:52 5 **Q.** None of those kinds of communities of interest, none

6 of those kinds of legislator peccadillos are going to be

7 listed in the Texas redistricting guide, right?

8 **A.** Right. Whereas in other states, there can be listed

9 communities of interest, there are not, to my knowledge,

09:59:16 10 in Texas.

11 **Q.** And you have been provided with none from NAACP,

12 right?

13 **A.** Well, I did meet with members of NAACP as part of my

14 process.

09:59:26 15 **Q.** And did they describe communities of interest to you

16 that you, then, put into your models?

17 **A.** In some cases, they described communities that did

18 make it into the report.

19 **Q.** So my question is maybe a little bit different.

09:59:40 20   Did you input community-of-interest data into the

21 models that you ran?

22 **A.** Okay. Let me take a moment to answer that.

23   So I have built methods to do that. And where there

24 are named communities of interest, the algorithmic models

09:59:58 25 can and do take that into account.

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1   In the case of Texas, because I was not provided with

2   a comprehensive list, I mostly used two proxies for

3   communities of interest, counties and county subunits or

4   subdivisions, as provided by the census.

10:00:14   5   **Q.**   Okay. So when we're talking about communities of

6   interest, for example, data that you would not have had

7   would have been about whether or not folks in the western

8   part of Bell County are likely to commute to the local

9   army base there, right?

10:00:31   10   **A.**   I actually do believe that is taken into account by

11   the census in the creation of their county subdivisions.

12   Commuting patterns are taken into account.

13   **Q.**   Okay. What about we have heard from two or three

14   witnesses from the township of Harlandale in south central

10:00:51   15   Bexar County and about why and how the history of that

16   small plot of land in Bexar County is important to folks

17   around there.

18   That's not the kind of data that your model would be

19   able to account for; is that fair?

10:01:03   20   **A.**   Except to the extent that it appears as a census

21   place, a census -- excuse me a census-designated place.

22   **Q.**   And so when you say to the extent that it appears as a

23   census-designated place, is that a way that you are -- is

24   there a way that you are able to quantify that for the

10:01:20   25   Court?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   Oh, yes. Yes. The census creates a data product

2   which lists what are called census places, that include

3   cities, towns, villages, and CDPs or census-designated

4   places.

10:01:33   5   **Q.**   And so what you are hoping there is that data

6   collected by the census will in some way represent the

7   kinds of connections that you might come across if you

8   were to go and visit there yourself, right?

9   **A.**   That's right.

10:01:47   10   **Q.**   We are relying, though, in some sense, on probability

11   rather than on concrete facts in that regard?

12   **A.**   We do have materials released by the census describing

13   how they create their places dataset, but I don't have

14   personal knowledge of the Texas examples.

10:02:05   15   **Q.**   So if there are, for example, familial connections

16   between two small towns in a given county, census data may

17   not necessarily pick that up?

18   **A.**   It may or it may not. I agree.

19   **Q.**   Particularly, if the families are named something like

10:02:18   20   Smith or Washington or Hernandez, right?

21   **A.**   I'm sorry. I don't understand the relevance.

22   **Q.**   Very common last names, right?

23   **A.**   Oh, I see. I have no particular knowledge of that.

24   **Q.**   The folks who would have particular knowledge of that

10:02:32   25   kind of granular community-of-interest information would

1 be legislators and their constituents, right?

2 **A.**   Right. Generally, members of the public.

3 **Q.**   All right. And you are aware that the Texas

4 Legislature, during the biennium between 2019 and 2021,

10:02:53 5 held a series of hearings in order to collect information,

6 not just about communities of interest, but specifically

7 about communities of interest, in preparation for

8 redistricting in 2021, right?

9 **A.**   I know that that's a common practice.

10:03:06 10 **Q.**   And do you know that they managed to put together

11 hearings via Zoom, even in the early days of the COVID

12 pandemic?

13 **A.**   I believe you.

14 **Q.**   And to be fair -- and I'm not picking on you if you

10:03:15 15 didn't -- but you didn't attend any of those hearings?

16 **A.**   No, I did not.

17 **Q.**   Likewise, you have not reviewed any of the legislative

18 record, the Senate journal, the House journal, committee

19 hearing transcripts as a part of your work in this case;

10:03:27 20 is that true?

21 **A.**   That's true.

22 **Q.**   You talked a little bit on direct about some very

23 large numbers. You talked about the number of potential

24 districts out there, and you talked about the 100,000 -- I

10:03:52 25 want to say simulations.

Laura Wells, RPR, RMR, CRR, RDR

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 1      You say you don't like that term.  What is the right
 2  term?
 3  A.   Well, 100,000 sampled maps.
 4  Q.   100,000 sampled maps.
 5      But in the context of all of the potential maps, even
 6  100,000 is a minuscule percentage, right?
 7  A.   Absolutely.
 8  Q.   I heard you say googol, and my son tells me that's a
 9  big number?
10  A.   Yes.
11  Q.   That's 10 to the --
12  A.   10 to the 100 hundred.  It had a meaning before the
13  company and a different spelling, even.
14           MR. KERCHER:  Write that down.
15  BY MR. KERCHER:
16  Q.   And the hope, though, of creating so many sample
17  districts is that by pure volume, you will be able to
18  control for what might otherwise be confounding factors;
19  is that right?
20  A.   No.  That's a common misconception.  So let me
21  explain.
22      Sheer volume will never do the job.  There are just
23  too many plans out there.  And that's why you need the
24  sort of more advanced mathematics to tell you something
25  about the sampling distribution.
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Laura Wells, RPR, RMR, CRR, RDR

1   So I can explain further, but I don't want to go on.

2 **Q.**   Well, yeah, and I appreciate that. I love that I

3 don't have to interrupt the witness. That's wonderful.

4 Thank you.

10:05:03   5   So, for example, when you were drawing 100,000 plans,

6 those 100,000 plans may come out with all kinds of

7 compactness, right?

8 **A.**   Generally, for a sampling process, if you didn't

9 control for compactness, you'd get only wild-looking

10:05:27   10 plans.

11 **Q.**   So in order for the sample maps that you are drawing

12 to come out with some kind of compactness, you have to

13 give it a compactness parameter, right?

14 **A.**   No. This is one of the elements of the research

10:05:41   15 breakthrough I was talking about before. I can explain.

16 **Q.**   Hit me.

17 **A.**   Okay. Great.

18   Okay. So the new idea that I and my collaborators

19 introduced is that we would divide districts using

10:05:55   20 something called a spanning tree. Without going into what

21 that is, it's a way of dividing districts that makes

22 compact plans much, much more likely to be chosen than

23 non-compact plans.

24   So we don't need any compactness tuning to produce

10:06:10   25 batches or ensembles of plans that are -- have a

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1   compactness range. It's still not exclusively highly

2   compact, but it tends to be highly compact using all the

3   standard measurements of compactness that exist.

4   So this does not have to be added as a parameter.

10:06:29   5   Pardon me. It's what you might call baked in to the

6   spanning tree method that has now become an industry

7   standard when it comes to redistricting algorithms.

8   **Q.**   And so when you are using a spanning tree or when you

9   are putting in -- if you don't have to do it for

10:06:43   10   compactness, if you are putting in other parameters for

11   other traditional redistricting criteria, is that what you

12   meant when on direct you talked about operationalizing

13   traditional redistricting criteria?

14   **A.**   Sorry. That might have been a use of jargon. By

10:06:59   15   "operationalize," I mean take something from plain English

16   or legal English, which is a little bit of different

17   language, and turn it quantitative so that you can use it

18   in a mathematical analysis. So again, "operationalize"

19   just means take English and turn it into math.

10:07:14   20   **Q.**   Okay. And so I think that answers my question.

21   But when you are trying to -- it sounds to me like you

22   are trying to use math to provide parameters to your model

23   for the sample districts you are going to draw?

24   **A.**   I can explain some of the parameters, if that's what

10:07:32   25   you are asking.

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1 **Q.**   No.   I'm just asking if that's -- that's one layer

2 deeper than I want to go.

3 **A.**   Okay.

4 **Q.**   You are trying to find -- forgive me -- a mathematical

10:07:42 5 sentence that will help your program drawer, your map

6 drawer, to draw maps that control for certain traditional

7 criteria, true?

8 **A.**   Right.   I would say I'm trying to find a formulation

9 that I can screen for on the level of the data.

10:07:57 10 **Q.**   Okay. You point out, I think, in your -- what is

11 functionally your first report, the corrected report,

12 which is NAACP 136, that the Texas guidelines -- that the

13 Texas guidelines do not mention partisanship; is that

14 right?

10:08:20 15 **A.**   We could look that up in my report, but I believe you

16 that that sounds right.

17 **Q.**   Why is that in your report?

18 **A.**   Oh, well, then we'd need to got look for it.   Would

19 you tell me what page it's on?

10:08:32 20 **Q.**   It's page 4.

21 **A.**   Okay.   Shall I read the sentence?

22 **Q.**   No.   Just if you can tell me why it was important to

23 you in your report to say that the Texas redistricting

24 guidelines do not mention partisanship.

10:08:55 25 **A.**   Well, I think the attempt here is to summarize what is

Laura Wells, RPR, RMR, CRR, RDR

1   in the guidelines and some things that I found in other

2   states that are not present.

3   **Q.**   Okay. Are you suggesting by saying the guidelines

4   don't mention partisanship that partisanship was not a

10:09:10   5   criterion considered by Texas legislators?

6   **A.**   Oh, No, I don't mean to suggest that.

7   **Q.**   And you likewise point out that the Texas

8   redistricting guidelines don't mention pairing incumbents,

9   district compactness, or preservation of district cores.

10:09:29   10   Similarly, you are not suggesting that those concerns

11   were not considerations by the Texas Legislature?

12   **A.**   That's right. By mere omission, I'm not suggesting

13   that it wasn't a concern.

14   **Q.**   So when you -- forgive me. The way I think about it

10:09:47   15   is that you have a robot that draws maps for you. And in

16   order to have the robot draw the maps for you, you have to

17   tell the robot something about how you want the maps

18   drawn.

19   Is that fair so far?

10:10:01   20   **A.**   Let me just nuance that just very slightly. There is

21   a base algorithm. There's a sort of a central code base.

22   And it does -- it enforces contiguity, prioritizes

23   compactness, and maintains population balance in ways that

24   don't have to be set except for the threshold of

10:10:22   25   population balance.

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1   Beyond that, you do have to create -- creative --

2 sometimes creative ways to take the other principles into

3 account.

4 **Q.**   So when you say that, for example, compactness is sort

10:10:37   5 of -- I think you said baked in to the -- as part of the

6 hardware of the robot, the robot can only make --

7 **A.**   The software.

8 **Q.**   -- the software. Okay. Told you I didn't know about

9 electricity.

10:10:49   10   So the compactness is baked in.

11   So if a group of legislators is trying to figure out

12 among themselves how they want to draw a series of

13 districts in their area, in their own county, they may or

14 may not prioritize compactness to the same degree that

10:11:06   15 your robot does, true?

16 **A.**   I'll say "algorithm," but, yes.

17 **Q.**   And I'm going to say "robot."

18   Part of your initial job in the case was to perform a

19 *Gingles* analysis. And we're not going to get into that

10:11:32   20 particularly, but you did engage in some map drawing early

21 on in your work in this case, right?

22 **A.**   I did.

23 **Q.**   And then engaging in map drawing in Texas, you got

24 sort of a direct lesson in how core retention matters to

10:11:47   25 some of the elected officials in Texas, right?

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 1 **A.**   You mean by comparing the old plan and the new?

 2 **Q.**   Well, I mean, you drew a demonstration map of

 3 congressional districts in Harris County, right?

 4 **A.**   Yes.

10:12:00   5 **Q.**   And then you filed a supplemental report that altered

 6 those districts a little bit?

 7 **A.**   Yeah.   I think that was one with Districts 9 and 18.

 8 **Q.**   That's right.

 9 **A.**   I remember.

10:12:11 10 **Q.**   Okay.

11   MR. KERCHER: Brian, could we please pull up

12 NAACP 136.

13 BY MR. KERCHER:

14 **Q.**   Dr. Duchin, that is your corrected report, page 15.

10:12:27 15   Okay.   So this is -- on the top here, we are looking

16 at the enacted congressional districts in the Harris

17 County area, right?

18 **A.**   Yes.

19 **Q.**   And the lower map is your first run at it, fair?

10:12:38 20 **A.**   Yes.

21 **Q.**   Okay.   In the enacted district, we can see some

22 peculiarities.

23   At the top of District 2, for example, there is a

24 notch.

10:12:48 25   Do you see that?

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1 **A.**   Yes. I do.

2 **Q.**   And then you can see Districts 18 and 29 in sort of a

3 yin-yang swirl there in the middle of the county, right?

4 **A.**   Yes.

10:13:01   5   JUDGE GUADERRAMA: Mr. Kercher, is there any way

6 we can blow it up a little bit?

7   MR. KERCHER: Sure. Brian, can you enlarge.

8 Thank you, sir.

9 BY MR. KERCHER:

10:13:13   10 **Q.**   So, Dr. Duchin, we were talking about in District 2 in

11 the enacted, which is on the left, there is a notch there

12 at the northern portion of the county, right?

13 **A.**   Yes.

14 **Q.**   And then you can see more clearly in the enacted how

10:13:28   15 Districts 29 and 18 swirl together in the center of the

16 county, right?

17 **A.**   That's that triangle that I talked about before.

18 **Q.**   Your first attempt at drawing those districts fixes

19 some of those problems.

10:13:43   20   You can see that 18 is now not a swirl anymore. It's

21 its own contiguous, compact, cozy, plump district, right?

22 **A.**   Right.

23 **Q.**   But it's also different in what turned out to be

24 important ways from the enacted map, right? So Districts

10:14:02   25 18 and 9 no longer touch, true?

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1   **A.**   True.

2   **Q.**   Okay. At some point, you became aware of the

3   plaintiff intervenors' claims in this case, right?

4   **A.**   Yes.

10:14:12   5   **Q.**   Okay. And you did file or provide a supplemental

6   report where you redrew the congressional districts in

7   Harris County, right?

8   **A.**   Right.

9   MR. KERCHER: Brian, if we can pull up NAACP

10:14:25   10   137 -- that's your supplemental report -- page 12. And

11   look at the last paragraph there.

12   BY MR. KERCHER:

13   **Q.**   In your supplemental report, Dr. Duchin, you wrote [as

14   read:] "The new supplemental plan depicts an alternative

10:14:42   15   balancing of priorities. It shows, as the current

16   congressional Black delegation from Texas has argued, that

17   CD-9 and CD-18 do not need to be entirely dismantled from

18   their benchmark configuration in order to achieve a

19   promising *Gingles I* demonstrative plan.

10:14:59   20   "Similarly to C2ALT, the districts CD-7 and CD-22 are

21   already historically aligned with coalition preferences in

22   most of the selected primaries and runoffs, and their

23   Biden shares show that they are competitive for Democrats

24   in statewide general elections. This plan is also

10:15:18   25   significantly more compact overall."

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          1         Did I read that correctly?

          2    A.   Yes.

          3    Q.   Okay.  Now, let's take a look side by side at your

          4    first attempt and your second attempt.

10:15:27  5              MR. KERCHER:  Brian, can wee see NAACP 136, page

          6    15, side by side with NAACP 137, page 13.

          7    BY MR. KERCHER:

          8    Q.   So, Dr. Duchin, on your left, you should see the page

          9    we were just looking at with the enacted plan and your

10:15:40 10    first map, and on your right, you should see your second

         11    run at those Harris County congressional districts.

         12         Do you see that?

         13    A.   I do.

         14    Q.   And if we compare your second attempt to your first

10:15:51 15    attempt and then reference back to the enacted, we can see

         16    your second attempt is something of a reversion to the

         17    mean of the enacted.

         18         Do you know what I mean there?

         19    A.   Well, I would call that least change.

10:16:04 20    Q.   I'm sorry?

         21    A.   I would call that least change.

         22    Q.   You can see that the swirling of District 18 has

         23    somewhat returned, right?

         24    A.   Well, yes.  That's what I mean by least changed.  It's

10:16:15 25    made to -- it's made intentionally to resemble the
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1 benchmark.

2 **Q.** Right.

3   And you can see also, in another way, that it is a

4 reversion to the mean or is the least changed, the notch

10:16:25 5 to District 2 has returned, right?

6 **A.** Right.

7 **Q.** So you sat down and you drew a map, and then you found

8 out about the preferences of some of the legislators who

9 were there, and it came out to be a very different map,

10:16:38 10 true?

11 **A.** Definitely.

12 **Q.** Okay. Now imagine there are 181 legislators providing

13 all of that feedback, right?

14 **A.** Yes. I can imagine.

10:16:47 15 **Q.** Friedrich Engels talks about something emerges that no

16 one planned.

17   Have you heard that?

18 **A.** No.

19 **Q.** Let's talk a little bit about the map-drawing

10:17:07 20 experience. We have heard some about it. We have heard

21 some remote testimony about it.

22   But you have sat down at the computer and drawn maps,

23 right?

24 **A.** I have done that, yes.

10:17:17 25 **Q.** And again, without meaning to diminish the complexity

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1   of it, it sounds like it's a little bit like painting by

2   numbers. You are drawing portions of land into a district

3   and out of a district and seeing how that will affect the

4   district's numbers, true?

10:17:34 5   **A.**   I am not sure about the analogy, but, yes, you -- when

6   you reconfigure, then you can check those statistics and

7   see how they have changed.

8   **Q.**   Now, we have talked about how legislative peccadillos,

9   local peculiarities may mean when you sit down to draw a

10:17:53 10   map, a precinct or a VTD that you are anticipating putting

11   into a district may in some sense be spoken for. Another

12   legislator may feel like he or she should keep that in his

13   or her district. There may be folks in the community who

14   want to stay in the district where they are.

10:18:09 15   It's not simply a matter for the folks whose districts

16   are being moved of moving that piece of land on one side

17   of a border or another, right?

18   **A.**   Well, I would say it's both/and.

19   **Q.**   When you are sitting at the computer, there are not

10:18:27 20   the constituents of the legislators telling you what they

21   want, fair?

22   **A.**   Not in general, right.

23   **Q.**   The software that you used as a map drawer has -- and

24   tell me if I'm using the term correctly -- a racial data

10:18:45 25   layer that you can use; is that right?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   No.   Do you mean the algorithmic drawing?

2   **Q.**   No.   Just your -- when you were drawing maps. Not the

3   robot drawing maps, you drawing maps.

4   **A.**   There is a fine line between me and the robot, as it

10:19:01   5   were.

6   But, no, not all the software has what you might call

7   a racial data layer. They have columns in the data frame.

8   Is that equivalent for the purpose of the question?

9   **Q.**   I have no idea what that means, so I can't tell you.

10:19:13   10   Let me ask you this: When you use map-drawing

11   software, do you have the opportunity to see racial data

12   as you draw the map?

13   **A.**   So, No, not all the software I use even has a

14   graphical user interface. So sometimes there is a visual

10:19:27   15   component, and sometimes not.

16   **Q.**   Are you familiar with map-drawing programs that use

17   what we've been calling racial shading?

18   **A.**   Yes. I call those choropleths. That's right.

19   **Q.**   Say that again?

10:19:41   20   **A.**   Choropleth is the name when you shade units according

21   to their percentage or account of some attribute.

22   **Q.**   Okay. So what that would mean is that if you turned

23   on some -- a layer of shading that was meant to show you

24   the different racial demographics in an area, it would not

10:20:01   25   have all blue for Asians, all red for White. It would

1 have purple, for example, or different gradients of color

2 in order to demonstrate just how White one area was, how

3 Hispanic another area was?

4 **A.**   Right. And can you can find about a dozen examples of

10:20:18   5 that in my report.

6 **Q.**   Okay. Is the same true for turning on partisan

7 shading in similar software, where you can see it by

8 gradient?

9 **A.**   Some software does that.

10:20:29   10 **Q.**   And so if you are a map drawer and you want to reach a

11 particular partisan goal, you could turn on partisan

12 shading. And it's not that you are selecting blue

13 districts or red districts. You would be selecting

14 gradients of purple; is that right? In this particular

10:20:50   15 colorful analogy.

16 **A.**   Sure. To try to answer as responsibly as I can,

17 usually you would see that shading -- and this is like --

18 I believe I mentioned this on direct -- at the precinct

19 level.

10:21:00   20   So if are you drawing below the precinct level,

21 usually that shading wouldn't be available, although it

22 depends where you are getting your data.

23 **Q.**   Right.

24   So coming back, though, I think -- and I appreciate

10:21:10   25 that you are trying to be responsive, and some of this has

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1   to do with the Luddite nature of my questioning.

2   But when one is turning on partisan shading,

3   understanding that it may not be as granular a data as

4   racial data, what one might see in a visual representation

10:21:30   5   is not this precinct is red or this VTD or this unit of

6   land is not red and this one is blue, but one is a darker

7   shade of purple, one is a lighter shade of purple, right?

8   **A.**   Typically, you'd see a gradient, sometimes not with

9   purple, but white in the middle. But now I'm quibbling.

10:21:48   10   Right.

11   **Q.**   I'm not above it myself.

12   How we operationalize redistricting criteria is going

13   to affect what set of 100,000 maps we see; is that true?

14   **A.**   That's exactly what I was talking about earlier in

10:22:27   15   terms of sensitivity analysis, yes.

16   **Q.**   And sensitivity analysis is -- as I understand it, is

17   a way to sort of check your work to make sure that you

18   have not put in parameters that are skewing the maps that

19   you see in an unanticipated way.

10:22:45   20   Is that a fair way to put it?

21   **A.**   That is a main goal of sensitivity analysis. More

22   generally, it's just to see if your results are sensitive

23   to the choices that you made.

24   **Q.**   Okay. And so we -- I guess that means we have to be

10:23:05   25   careful about sort of what we tell the robot about how to

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 1 draw the maps, right?

 2 **A.**   That's right. I try to be careful that I haven't

 3 inadvertently created an artifact that looks like a

 4 finding but really only reflects my input decisions.

10:23:21   5 **Q.**   And that sounds like a much smarter way of talking

 6 about controlling for a potential confounding variable?

 7 **A.**   That's one kind of -- I think you could put it under

 8 that umbrella.

 9 **Q.**   Okay. So, for example, if you tell the robot to draw

10:23:37 10 maps and to obey the county-line rule, the 100,000 maps

11 that you get may look very different than if you tell the

12 robot to ignore the county-line rule, right?

13 **A.**   Absolutely.

14 **Q.**   And if you tell the robot to look at race, those maps

10:23:53 15 could look different than if the robot is not looking at

16 race, right?

17 **A.**   Right.

18 **Q.**   And, likewise, partisanship, true?

19 **A.**   True.

10:24:05 20 **Q.**   Now, when you ask the robot to draw the maps, you ask

21 the robot to draw the maps without regard to race or

22 partisanship; is that right?

23 **A.**   Initially, right.

24 **Q.**   And I understand that later you came back and then

10:24:19 25 looked at the 100,000 maps you had gotten and did some

Laura Wells, RPR, RMR, CRR, RDR

1 follow-up analysis.

2   Is that a fair way to put it?

3 **A.**   Sure.

4   MR. KERCHER: Brian, let's pull up NAACP 136 and

10:24:46   5 look at page 39.

6 BY MR. KERCHER:

7 **Q.**   Dr. Duchin, if you are looking -- if you are a

8 hard-copy person like I am, that is your corrected report.

9   MR. KERCHER: Could you bring up the second

10:25:00 10 paragraph. I'm sorry, the -- yeah. The second paragraph

11 under CD-22, please. Thank you.

12 BY MR. KERCHER:

13 **Q.**   Here you talk about the city of Sugar Land, and you

14 say it was needlessly split.

10:25:15 15   Do you see that?

16 **A.**   I do.

17 **Q.**   When you say "needlessly" --

18 **A.**   I think it says "unnecessarily."

19 **Q.**   "Unnecessarily." Clearly.

10:25:22 20   When you say "unnecessarily," unnecessarily to whom?

21 **A.**   Oh, that's a -- that's a remark with respect to its

22 size. It has 111,000 people, compared to a congressional

23 district size of over 700,000.

24 **Q.**   And I think that you point out that previously Sugar

10:25:42 25 Land, in the benchmark, had not been split, right?

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1 **A.**   I think that's right.

2 **Q.**   I'll represent to you that that's true.

3 **A.**   Okay. Good.

4 **Q.**   Now, you are aware, though, that Sugar Land has grown

10:25:55 5 tremendously over the last decade, right?

6 **A.**   That's right.

7 **Q.**   And, in fact, that part of Fort Bend County was the

8 most overpopulated House district in the enacted map --

9 or, excuse me, in the benchmark, right?

10:26:09 10 **A.**   That's believable.

11 **Q.**   So sometimes as population centers grow over a decade,

12 they might wind up being split, where previously they had

13 not. That fair, right?

14 **A.**   Of course.

10:26:23 15 **Q.**   I think your point is that it had not grown enough

16 that it could not itself still remain inside a district;

17 is that right?

18 **A.**   Right. It's well smaller than a district size.

19 **Q.**   But because Sugar Land has grown considerably over the

10:26:35 20 last decade, it will have new economic engines. It will

21 have new politically interesting parts to a variety of

22 local politicians, right?

23 **A.**   I'm sure that's true.

24 **Q.**   So when we talk about whether the city is needlessly

10:26:50 25 split, that is purely from a demographic perspective that

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1   does not look at what the local political interests might

2   consider?

3   **A.**   Right. That just says the splitting wasn't

4   necessary -- strictly necessary.

10:27:02   5   **Q.**   And I think you used similar language when you talk

6   about the city of Carrollton in the DFW area, right?

7   **A.**   I believe that.

8   **Q.**   And then Carrollton is a city that is in three

9   counties, right?

10:27:14   10   **A.**   Yeah. It's right there at the edge.

11   **Q.**   And previously, under the benchmark, Carrollton had

12   not been split, right?

13   **A.**   That's my belief.

14   **Q.**   But Carrollton also has grown a lot, right?

10:27:27   15   **A.**   I believe you.

16   **Q.**   And that -- between the growth of Carrollton and its

17   position on three county lines makes it fairly likely that

18   it was eventually going to get split as among districts?

19   **A.**   Right. Though that wouldn't explain splitting within

10:27:43   20   Denton.

21   MR. KERCHER: Your Honors, before I move on, it

22   seems like it's time for our morning break. Am I right

23   about that?

24   JUDGE GUADERRAMA: We're close. We can take a

10:27:52   25   break now.

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	1	Let's recess until 10:45. We'll resume our
	2	proceedings at 10:45.
	3	THE MARSHAL: All rise.
	4	MR. VELEZ: This court stands in recess.
10:28:18	5	(Recess from 10:28 a.m. to 10:44 a.m.)
	6	JUDGE GUADERRAMA: Be seated, please.
	7	Mr. Kercher, whenever you are ready, sir.
	8	MR. KERCHER: Brian, could you please pull up
	9	NAACP 136. Thank you. Page 56.
10:45:59	10	BY MR. KERCHER:
	11	**Q.** Dr. Duchin, you talked about -- on direct examination
	12	about HD-54, right?
	13	**A.** Yes.
	14	**Q.** And this shows with the gray and the green what HD-54
10:46:11	15	looked like under the benchmark and what it looks like
	16	under the enacted, right?
	17	**A.** Yes.
	18	**Q.** And you point out that the House district under the
	19	benchmark used to move into the county westward, right,
10:46:23	20	and it no longer does that under the enacted?
	21	**A.** That's right.
	22	**Q.** You did not mention, though, and you may not have been
	23	asked about it, that the reason that HD-54 no longer has
	24	that bowtie shape, as you put it -- and as a bowtie
10:46:38	25	wearer, I appreciate that -- is because of the population

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1   change in the area, right?

2   **A.**   That contributes.

3   **Q.**   It used to be the case that HD-54 had to move into the

4   adjacent county to gather population, but in -- after the

10:46:55   5   2020 Census, it no longer needed extra county population,

6   true?

7   **A.**   Well, it only contained part of Bell County before,

8   but I'm not sure of the total numbers.

9   **Q.**   In all events, 54 and 55 are now both inside Bell

10:47:12   10   County, right?

11   **A.**   Correct.

12   **Q.**   Now, you have highlighted for the Court -- you have --

13   in a red outline the city of Killeen, right?

14   **A.**   True.

10:47:20   15   **Q.**   Your map, though, does not show the cities of Belton,

16   Temple, and Salado, right?

17   **A.**   Right.

18   **Q.**   And you don't have any information about whether

19   Belton, Temple, and Salado together constitute a community

10:47:35   20   of interest?

21   **A.**   That's right.

22   **Q.**   And you don't know whether or not Representative Shine

23   or Representative Buckley, both of whom represented 54 and

24   55 at the time, would have been under local pressure to

10:47:46   25   keep Belton, Salado, and Temple together, rather than

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1 keeping all of Killeen together, right?

2 **A.** I don't have information about that, correct.

3 **Q.** That's just not information you can feed into the

4 robot, fair?

10:47:59 5 **A.** Well, you could if you had it, but I did not have that

6 information.

7 **Q.** I guess that's my point. I didn't mean you, plural.

8 I meant that's not information you could have put into the

9 robot, because you didn't have it, right?

10:48:07 10 **A.** I agree.

11 **Q.** We were talking before the break about how the sample

12 maps that you have the robot draw prefer compact

13 districts, and that's built in. That's baked in, right?

14 **A.** Yes.

10:48:30 15 **Q.** So what that means, though, is that the robot is not

16 going to draw plans that will look like -- or draw maps

17 that will look like the maps drawn by the Texas

18 Legislature, right?

19 **A.** No. It's a matter of probabilities. So the algorithm

10:48:49 20 has what is called full support, which means it can draw

21 anything, including reproducing the exact enacted plan, if

22 you give it enough time.

23 **Q.** Well, but if the compactness variable, as it were, is

24 built in, then it is going to favor more compact plans.

10:49:07 25 That's how we are getting the compactness, right?

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1   **A.**   Right.   So "favor" means a matter of probability.   So

2   the very non-compact plans will have a low probability.

3   But if you run for long enough, eventually, they will be

4   produced.

10:49:21   5   **Q.**   A couple of folks in your position have talked about

6   letting the computer work long enough.

7   How long did the robot work to make your 100,000

8   plans?

9   **A.**   We can make 100,000 plans in a matter of seconds.

10:49:34   10   **Q.**   So if you had let the robot work for a day, we could

11   have had some exponentially higher number, right?

12   **A.**   A higher number.

13   **Q.**   "Exponentially" probably means something different

14   than it does to you.

10:49:47   15   **A.**   It does.

16   **Q.**   It just means a lot, right?

17   So as a matter of probability, do -- having looked at

18   the plans drawn by the Texas Legislature, would you agree

19   with me that they tended to be less compact than districts

10:50:05   20   drawn -- than the districts provided by your robot?

21   **A.**   If you look at the outputs from the algorithmic, if

22   you look at the ensembles, and you plot their compactness,

23   you'll see something like a bell curve.   And the State

24   falls pretty low, but sometimes the algorithm produces

10:50:26   25   things even less compact.

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1 **Q.** So the maps that the robot is producing have a lower

2 probability of producing maps as non-compact as those

3 produced by the legislature; is that right?

4 **A.** That's right. Lower probability, correct.

10:50:38   5 **Q.** And in that sense, then, we -- tell me if I'm putting

6 this incorrectly.

7   In that sense, then, the robot favors compactness to a

8 degree that the legislature did not?

9 **A.** Well, the lower compactness does occur in the sample.

10:50:53 10 **Q.** I'm not sure that answers my question. It may answer

11 my question in your head, but tell me if this is correct.

12   That the robot favors compactness to a degree that the

13 legislature did not in the enacted map?

14 **A.** I guess I just wouldn't put it that way.

10:51:10 15 **Q.** But is it incorrect?

16 **A.** I hate to say this, but I'll go ahead and call it

17 incorrect.

18 **Q.** How so?

19 **A.** Favors compactness to a degree. What it does is it

10:51:24 20 takes any particular pair of plans, you can assess the

21 relative probability of seeing one and the other in terms

22 of their compactness, but "favors" I don't think expresses

23 that correctly.

24 **Q.** "Favors" expresses a level of intentionality in the

10:51:42 25 robot that it may not have?

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1   **A.**   Correct.

2   **Q.**   Is it right to say the robot is less likely to create

3   a plan as non-compact as that enacted by the legislature?

4   **A.**   It's definitely less likely than a more compact plan.

10:52:07   5   **Q.**   Let's talk a little bit about your response to

6   Dr. Trende's critique, okay?

7   **A.**   Yes.

8   MR. KERCHER: Brian, could you bring up NAACP 138

9   at page 11, the second paragraph.

10:52:23   10   BY MR. KERCHER:

11   **Q.**   Now, you point out that Dr. Trende -- here you call

12   him Mr. Trende, as he was at the time, but he has since

13   matriculated. You point out that Dr. Trende used an

14   algorithm called SMC; is that right?

10:52:38   15   **A.**   Yes.

16   **Q.**   And that's Dr. Trende's robot?

17   **A.**   Well, it's Kosuke Imai's algorithm.

18   **Q.**   And when you say -- well, yeah, and I don't mean in a

19   proprietary sense.

10:52:48   20   That's the robot that Dr. Trende was using?

21   **A.**   That's my understanding.

22   **Q.**   And Kosuke Imai is another regular in the

23   redistricting expert circuit, right?

24   **A.**   He has done a fair amount of expert work, yes.

10:52:58   25   **Q.**   And you and Dr. Imai have even been on the same side

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1   of some redistricting cases?

2   **A.**   We have.

3   **Q.**   You point out here in your discussion of Dr. Trende's

4   use of an algorithm that the SMC was not -- at the time,

10:53:11   5   had not completed peer review, right?

6   **A.**   Right.

7   **Q.**   It has since completed peer review; is that true?

8   **A.**   Yes.

9   **Q.**   Now -- and again, forget the crudeness, but as I think

10:53:22   10   about it, Dr. Trende is using a different kind of robot to

11   try and proximate your analysis, but adding some partisan

12   data; is that right?

13   **A.**   Well, I can't be sure if the attempt was to proximate

14   my analysis. He says the results are substantially

10:53:36   15   similar. So that does suggest an effort at replication.

16   **Q.**   Do you question the nature of the results that he

17   claims based on his input into his robot?

18   **A.**   Okay. Let's see. Are you asking whether I think the

19   methods are substantially similar? Just to clarify the

10:53:53   20   question.

21   **Q.**   Let me ask you this: You point out that the robot

22   that Dr. Trende used, SMI -- or SMC was not at the time

23   peer reviewed?

24   **A.**   Right.

10:54:03   25   **Q.**   Was that to suggest that SMC was an inferior

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1 algorithm?

2 **A.**   Oh, No. It was literally what it says, just to say

3 that it hadn't yet been through peer review.

4 **Q.**   If you were concerned that Dr. Trende had used an

10:54:16 5 inferior algorithm, you could have attempted to perform

6 the same analysis using your own algorithm; is that true?

7 **A.**   I think -- I'm just confused by the question because I

8 think my analysis had already been presented.

9 **Q.**   Right. But you saw that Dr. Trende put together his

10:54:31 10 analysis, right? And if you were concerned that his robot

11 was broken, you could have attempted his analysis with

12 your robot?

13 **A.**   I think we were doing mostly the same thing, I think.

14 **Q.**   It's correct -- well, let me ask you this: Do you

10:54:53 15 know that Dr. Trende has provided a couple of follow-up

16 reports in 2025?

17 **A.**   I'm not sure whether I have seen those.

18 **Q.**   Okay. In all events, you have not updated or

19 supplemented your reports in 2025, true?

10:55:06 20 **A.**   That's true.

21 **Q.**   And so you don't -- if Dr. Trende -- and I'll

22 represent to you that he has -- has provided a couple of

23 updated reports in 2025, you have not responded to those,

24 fair to say?

10:55:18 25 **A.**   I certainly haven't responded to them. That's right.

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	1	**Q.** We agree, don't we, that race and partisanship are
	2	closely correlated?
	3	**A.** In Texas? In general?
	4	**Q.** Let's say in Texas.
10:55:35	5	**A.** Yes. I have -- my first report contains a good deal
	6	of evidence in that direction.
	7	**Q.** According to your data, the minority populations you
	8	studied clearly favor Democratic candidates in general
	9	elections, right?
10:55:51	10	**A.** That has been true, yes, in the period that I covered.
	11	**Q.** So much so that when you looked at primary elections,
	12	you only looked at Democratic primaries, right?
	13	**A.** That's correct.
	14	**Q.** And my understanding of that -- of the thinking there
10:56:04	15	is that so few minorities are participating in the
	16	Republican primary that it just wouldn't yield
	17	particularly useful information; is that right?
	18	**A.** I think that's fair.
	19	**Q.** That's a long way of saying, maybe, the minority
10:56:19	20	candidate of choice is usually a Democrat?
	21	**A.** Again, at the time. I think there have been some
	22	shifts since then.
	23	**Q.** Another way, perhaps, to arrange these concepts that
	24	we have been talking about is to say that high-minority
10:56:38	25	precincts tends to be high-Democrat precincts; is that

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           1 true?

           2 **A.**   There is certainly a correlation.

           3 **Q.**   In fact, there are few majority-minority districts

           4 that are not majority Biden, according to the data that

10:56:53   5 you looked at, right?

           6 **A.**   I don't know that specifically, but that sounds

           7 plausible.

           8 **Q.**   Well, you are trying -- this is part of how you are

           9 trying to disaggregate race from partisanship, right?

10:57:04 10 **A.**   I make several different attempts to disaggregate.

          11 **Q.**   And -- but as you sit here, you cannot say whether

          12 it's unusual to find a majority-minority precinct that is

          13 not Biden?

          14 **A.**   Well, you have to remember that turnout is another

10:57:22 15 kind of mediating factor. So not everyone who is a

          16 resident is eligible to vote, not everyone who is eligible

          17 is registered, not everyone who is registered turns out.

          18 So there are a few steps in between demographics and

          19 results.

10:57:37 20 **Q.**   Okay. As a corollary to your findings that minority

          21 voters tend to prefer the Democratic candidate, you also

          22 found that White voters in Texas tended to prefer the

          23 Republican candidate; is that right?

          24 **A.**   That's right. I believe typically by 80 to 20.

10:57:53 25 **Q.**   And we're importing some VRA language here, but as a

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

1 result of that polarization, it's unsurprising to find

2 that an attempt to separate Republicans and Democrats

3 would show some racial impact, right?

4 **A.**   That's right. You would expect that.

10:58:11 5 **Q.**   According to your EI analysis, Hispanics lean

6 Democrat, right?

7 **A.**   Do you mean lean in some technical sense or just --

8 **Q.**   Tend to vote -- are more likely to vote for a

9 Democrat, right?

10:58:26 10 **A.**   Yes. And, actually, I can give you some numbers on

11 that.

12 **Q.**   Well, let's take it at a hypothetical level. I'm not

13 sure we need to dig into the data.

14   We agree that Hispanic voters tend to vote for the

10:58:43 15 Democrat candidate but not uniformly. Can we agree on

16 that?

17 **A.**   Far from uniform. That's right.

18 **Q.**   So if we have -- let's say we have a 100 percent

19 Hispanic precinct that we move, say, from HD-118 into

10:59:06 20 adjacent HD-117 in Bexar County. We will have moved

21 100 percent Hispanics, but we may only have moved

22 70 percent Democrats, right?

23 **A.**   That hypothetical is reasonable.

24 **Q.**   Likewise, if we have a precinct -- likewise, if we

10:59:29 25 have a precinct that is 100 Black voters, and we agree

1   hypothetically that Black voters prefer the Democratic

2   candidate at 90 percent, and if we move 100 Black voters

3   from CD-9 to CD-18, we will have moved 100 Black voters

4   but only 90 Democrat voters, right?

10:59:54   5   **A.**   Just to be slightly careful, I try to avoid calling

6   voters Democrats or Republicans. I tend to prefer talking

7   about their votes in particular contests.

8   But what you just said is perfectly reasonable on the

9   level of a particular contest.

11:00:08   10   **Q.**   Well, for purposes of the way we're trying to

11   visualize this, I mean, yes, voters may change from

12   election to election depending on who is on the ballot,

13   but we're also talking about probability and who tends to

14   vote which way, right?

11:00:21   15   **A.**   If that's what you are asking about, then that's what

16   we're talking about.

17   **Q.**   And we talked this hypothetical through with

18   hypothetical Black voters and hypothetical Hispanic

19   voters.

11:00:41   20   Same would be true with members of the Asian American

21   Pacific Islander community, AAPI voters, right?

22   **A.**   Definitely.

23   **Q.**   They tend to be, though, less cohesive than either of

24   the Hispanic or the Black populations?

11:00:53   25   **A.**   Mostly I agree. I would only nuance that by saying

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1 you also have the lowest confidence about estimating Asian

2 votes because the patterns of dispersion make it harder to

3 estimate.

4 **Q.**   So a gerrymanderer who wanted to exclude precincts

11:01:12 5 from a Republican district would move more minorities than

6 Democrat voters; is that true?

7 **A.**   It depends on how you are going consider -- you are

8 asking about someone who is trying to gerrymander?

9 **Q.**   Yes.   Someone who is trying to build a stronger

11:01:35 10 Republican district and so moves a predominantly minority

11 precinct out of the district.

12 **A.**   Well, in my view, it would make a lot more sense to

13 use electoral history than to use race at all.   Because

14 electoral history takes into account not only

11:01:52 15 probabilistic patterns of voting, but also turnout, also

16 primary versus general participation.   All of that is

17 present in electoral results and has to be

18 probabilistically estimated if you are using race.

19 **Q.**   That makes sense.

11:02:06 20   So if the map drawer is not looking at race but is

21 instead looking at electoral results, the map drawer may

22 unknowingly move a predominantly minority precinct in or

23 out of a given district, right?

24 **A.**   Absolutely.

11:02:22 25 **Q.**   And because the preference for Democrats lags behind

1 the total population of a given minority, if we are

2 looking ex post at that change, the change will look more

3 racial than it looks political, even though it may well

4 have been a race-blind change, true?

11:02:44 5 **A.** That's exactly what I was testing in the response

6 report.

7   JUDGE GUADERRAMA: Is there an answer to the

8 question? Is that true?

9   THE WITNESS: So it may look that way. That's

11:02:58 10 what I tested and found not to be the case.

11   JUDGE GUADERRAMA: Okay.

12 BY MR. KERCHER:

13 **Q.** So the answer to the question is it may look that

14 way --

11:03:05 15 **A.** May look that way.

16 **Q.** -- there may be ways to test for it; is that right?

17 **A.** Yes. I did test for it.

18 **Q.** And, in fact, that appearance of having a higher

19 racial effect than partisan effect would be exacerbated,

11:03:23 20 if you will, by lower turnout rates among certain minority

21 populations, right?

22 **A.** It could be, which is precisely why I tested for it.

23 **Q.** It's true, Dr. Duchin, that you did not examine

24 heavily White areas; is that right?

11:03:50 25 **A.** In the clusters that we looked at, those included

Laura Wells, RPR, RMR, CRR, RDR

1   certainly, heavily White areas.

2   **Q.**   Can you talk to the Court, just "yes" or "no"

3   generally, about what happened in heavily White Democratic

4   precincts politically?

11:04:09   5   **A.**   Yes.

6   **Q.**   Okay. On the -- not simulations, on the demonstration

7   maps that your robot makes, your maps do not ensure that

8   incumbents are not paired, right?

9   **A.**   At the time of the report, I had not looked at that.

11:04:24   10   **Q.**   Okay. So -- and forgive me -- the answer to my

11   question is, no, your robot does not account for incumbent

12   pairing, right?

13   **A.**   It can, but in the reports, I had not done that.

14   **Q.**   All right. And I am not asking you about the

11:04:37   15   theoretical limits of your robot. I'm sure it can do many

16   things, probably. It can certainly do math better than I

17   can.

18   But for purposes of your report, in the 100,000 maps

19   that your robot drew, it was not drawing those maps while

11:04:55   20   accounting or trying to prevent pairing incumbents?

21   **A.**   That's right. The reports do not include that.

22   **Q.**   You talked a little bit on direct about why -- when

23   you look at the map drawn by the legislature, I think you

24   said they left a lot on the table in terms of drawing a

11:05:19   25   more Republican map, right?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   In some clusters.

2   **Q.**   But there are different ways to measure how Republican

3   of a map you want, right?

4   **A.**   Yes.

11:05:30   5   **Q.**   One way that you could measure that is by drawing the

6   maximum number of Republican districts in any given map,

7   right?

8   **A.**   That's one way.

9   **Q.**   Another way that you might measure it is by drawing

11:05:41   10   the maximum number of Republican districts that are likely

11   to vote Republican at some percentage or higher, right?

12   **A.**   True.

13   **Q.**   So if a map drawer, for example, wanted only

14   65 percent Trump districts, that would be one way to

11:05:57   15   measure Republican or partisan strength in a map, right?

16   **A.**   That's right.

17   **Q.**   And you don't know what kinds of goals the map drawers

18   or the Texas Legislature had when they were making -- when

19   they were putting together their partisan goals, right?

11:06:14   20   **A.**   I don't.

21   **Q.**   It's true, isn't it, that Republicans lost a lot of

22   districts in 2018 and 2020 that Trump had barely carried?

23   **A.**   I believe that's reasonable.

24   **Q.**   And congressional districts over the previous decade,

11:06:36   25   right?

1   **A.**   I can accept that representation.

2   **Q.**   And part of the trend in Texas had been that the

3   growing suburban populations -- we talked about Fort Bend

4   and Carrollton -- have been trending away from the GOP,

11:06:49   5   true?

6   **A.**   I don't have that information in front of me, but that

7   sounds reasonable.

8   **Q.**   So is it right to say that a marginally Republican

9   district in 2022 might not still be Republican in 2026?

11:07:08   10   **A.**   I think the trend is not in that direction, but as a

11   matter of possibility, certainly, it might not.

12   **Q.**   It depends on where you are in the state, perhaps?

13   **A.**   Strongly.

14   MR. KERCHER: Brian, can we please pull up NAACP

11:07:38   15   138, page 14.

16   BY MR. KERCHER:

17   **Q.**   All right, Dr. "Duchan," this -- "Duchin," sorry.

18   Emphasis is on the first syllable, right? "Duchin"?

19   **A.**   Yes. "Duchin."

11:07:56   20   **Q.**   All right. This is the -- a part of the report -- and

21   I think you looked at this on direct -- where you respond,

22   at least in part, to Dr. Trende's critiques, right?

23   **A.**   Right.

24   **Q.**   And we spoke a moment ago about how looking at the way

11:08:09   25   a map was drawn, with hindsight, it might look like

Laura Wells, RPR, RMR, CRR, RDR

1   partisan changes are racial changes. And here you are

2   trying to show that you accounted for that in a subsequent

3   report, right?

4   **A.**   That's right.

11:08:26   5   **Q.**   And you said this, I think, on direct. You did not go

6   back to your robot and say, okay, robot, this time, I want

7   for you to draw 100,000 districts taking into account

8   partisan information, right?

9   **A.**   Right.

11:08:41   10   **Q.**   You took the first set of nonpartisan 100,000 maps and

11   then compared them to a subset of the 100,000 that were in

12   some sense particularly partisan.

13   Do I have that part right?

14   **A.**   Yes, you do.

11:08:55   15   **Q.**   Okay. But because you didn't go back and ask the

16   robot to redraw the 100,000 maps with partisan data, your

17   baseline is still the nonpartisan baseline, true?

18   **A.**   Well, it's a partisan subset.

19   **Q.**   Well -- and maybe I have got my terms mixed up here.

11:09:14   20   But when you are looking at the particularly partisan maps

21   and trying to see what the racial effects look like in

22   those particularly partisan maps, you are still comparing

23   those particularly partisan maps to the baseline of the

24   nonpartisan 100,000 maps, right?

11:09:30   25   **A.**   I see. No. Not only. I'm also comparing the

Laura Wells, RPR, RMR, CRR, RDR

1   partisan subset to the enacted plan. So I'm using the

2   partisan subset as a baseline against which to compare the

3   enacted plan.

4   **Q.**   And when you make that comparison, you talk about

11:09:47   5   whether or not a particular district is a Trump district

6   or is a Republican district, right?

7   **A.**   Republican from the point of view of a particular

8   contest, yes.

9   **Q.**   Right.

11:10:01   10   And I'm not trying to put words in your mouth, but you

11   have the Trump-favoring and Republican-favoring metrics,

12   right?

13   **A.**   Yes. That's right.

14   **Q.**   But when you are looking at the Trump-favoring and

11:10:12   15   Republican-favoring metrics, you don't know by how much

16   the legislature wanted a district to favor Trump or the

17   Republican Party, right?

18   **A.**   Well, that's right. But I guess I can say by using

19   all 19 contests, one of the effects is to wash out those

11:10:25   20   close wins, which I think is what you are getting at.

21   So if you were really cutting it thin, then you

22   wouldn't consistently win across those 19 contests. So

23   it's a way of trying to take margins into account.

24   **Q.**   It's a way of trying to take margins into account, but

11:10:42   25   it does not -- as you say, the demonstration maps that

Laura Wells, RPR, RMR, CRR, RDR

1   your robot creates do not -- are not a substitute for the

2   human judgment that actually created the enacted map,

3   right?

4   **A.**   That's right. They are not trying to simulate human

11:10:56   5   judgment.

6   **Q.**   And so we are looking at 100,000 maps that are

7   designed to give us a sense of what else is out there, but

8   they cannot replicate the choices made by the legislature?

9   **A.**   They are not attempting to.

11:11:07   10   **Q.**   Now, we talked a little bit earlier about how you drew

11   some maps as an expert in this case, I think for your

12   *Gingles* analysis, right?

13   **A.**   Yes.

14   **Q.**   You have not drawn maps that were for a legislature

11:11:22   15   that have been enacted; is that right?

16   **A.**   I have worked with legislatures, not in Texas.

17   **Q.**   I'm sorry?

18   **A.**   But not in Texas.

19   **Q.**   Okay. When a person draws a map, then, do they

11:11:34   20   usually have dot-density plots in front of them?

21   **A.**   I can't speak to what is usual, having done it very

22   selectively.

23   **Q.**   Okay. When you drew maps, did you have dot-density

24   plots?

11:11:48   25   **A.**   No.

1 **Q.** The actual map drawer tends to have some kind of a

2 heat map with the gradients that we talked about?

3 **A.** I would hesitate to guess what, for instance, RedAppl

4 shows you. I'm not sure.

11:12:02 5 **Q.** If we're trying to figure out what the legislature

6 intended to do when it was drawing the map, might it not

7 be useful to look at the information that the legislators

8 had in front of them as they drew the maps?

9 **A.** Good. So just to clarify, I think what is important

11:12:21 10 about my sort of data scientific techniques is that I'm

11 not trying to read minds, and I'm not trying to simulate

12 the judgment. I'm creating a kind of neutral baseline to

13 compare against. And in this case, I'm subsetting to have

14 certain attributes.

11:12:38 15 It's maybe worth mentioning that as part of that

16 sensitivity analysis we talked about earlier, I did try a

17 version of this where the algorithm favors partisanship in

18 addition to what I show here, which is a subset, and the

19 results are consistent.

11:12:56 20 And I did that with numerous attributes. I tried it

21 this way, I tried it that way, and the results are

22 consistent.

23 **Q.** I'm not sure I followed all of that.

24 You never went back to the robot and said, please draw

11:13:08 25 100,000 partisan maps?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.**   I did try that, actually.

2 **Q.**   You did try that?

3 **A.**   Yes.

4 **Q.**   Is that in your report?

11:13:14   5 **A.**   No because it is consistent with the findings here.

6 So I presented a simple and what I think is quite helpful,

7 strongest table of many, many findings that are -- that I

8 used for my sensitivity analysis.

9 **Q.**   So wait a minute. Your testimony is that you went

11:13:31   10 back to your robot, asked it to draw partisan maps, but

11 that's not in your report?

12 **A.**   It was part of my sensitivity analysis, as was

13 incumbent preservation.

14   MR. KERCHER: Objection. Nonresponsive.

11:13:45   15 BY MR. KERCHER:

16 **Q.**   It's not in your report?

17 **A.**   True.

18 **Q.**   So if it's not in your report, how would I have known

19 about it?

11:13:52   20 **A.**   You can ask. I had a deposition.

21 **Q.**   How would I know to ask about it? If you went and ran

22 that important analysis, where you thought it was

23 important enough to go and ask your robot to draw a

24 partisan map, but you never showed me that information,

11:14:06   25 how would I know to ask?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   Well, I tried many variants. Those are covered by

2   this robustness or sensitivity analysis that we have been

3   discussing. And I'm happy to discuss all the different

4   things I tried for sensitivity analysis.

11:14:18   5   **Q.**   And I appreciate the happiness to discuss those

6   things, but if I don't have any notice that you did them,

7   how can we have that discussion?

8   MR. STEINER: Objection, Your Honor. Her report

9   presents, in accordance with the Rules, the findings that

11:14:31   10   she -- her opinions that she testified to. He is asking

11   her open-ended questions on cross, but there is no

12   obligation under the Rules for her to do everything that

13   she did in a report for the sensitivity analysis. She has

14   explained this fully. Yeah, this isn't an appropriate

11:14:46   15   attempt at impeachment.

16   MR. KERCHER: I'm not sure I understand the

17   objection.

18   JUDGE GUADERRAMA: I'm going to overrule that

19   objection.

11:14:52   20   BY MR. KERCHER:

21   **Q.**   Dr. Duchin, it sounds like you did a lot of stuff that

22   we haven't talked about -- or that is not in your report?

23   **A.**   Well, that's absolutely true. The sensitivity

24   analysis is really quite extensive.

11:15:01   25   **Q.**   So because it's not in your report, when my former

1   colleague, Mr. Thompson, sat down with you at your

2   deposition in 2022, the two of you did not talk about what

3   happens when your robot gets partisan data?

4   **A.**   I certainly would have reported it if the results were

11:15:16   5   any different.

6   **Q.**   But if you didn't report it, the Court and I cannot

7   look at that ourselves, true?

8   **A.**   It's true that you can't look at it without asking

9   about it. That's right.

11:15:27   10   **Q.**   And if you did not put it in your report, then I can't

11   reproduce that method, right?

12   **A.**   Actually, that part is not true because all of the

13   code and all of the data is fully public and open.

14   **Q.**   Is it public and open in your report?

11:15:44   15   **A.**   It's public and open online and has been for years.

16   **Q.**   Okay. So it sounds like what you are saying is I

17   could use the same robot that you are using, but I don't

18   know how you used the robot when you gave it partisan

19   data?

11:15:57   20   **A.**   Actually, that's fully published and open.

21   **Q.**   Where is it published?

22   **A.**   I can point you to the website.

23   **Q.**   So it's not published in your report?

24   **A.**   Well, no. You are asking, is all my sensitivity

11:16:09   25   analysis described in the report? No.

Laura Wells, RPR, RMR, CRR, RDR

1   There is an appendix in the first report that gives

2   examples of the kind of sensitivity analysis that were

3   performed, and it's perfectly reasonable to ask me about

4   them.

11:16:22   5   **Q.**   Well, does the appendix tell me that you gave the

6   robot partisan data?

7   **A.**   What is shown here, I did not.

8   **Q.**   Okay.

9   **A.**   So the appendix describes what is done in the report.

11:16:33   10   But if you are asking, in the course of my work as a data

11   scientist studying Texas, what else have I done? I can

12   answer that question. But I provided in the report, the

13   appendices, and the backup materials, everything that

14   contributes to what you see as conclusions in the report.

11:16:47   15   **Q.**   Well, but I'm not asking you what you have done

16   outside the context of the report. What I understood you

17   to say is that as part of putting together your report,

18   you gave the robot partisan data?

19   **A.**   No, that's not right. I did that as a robustness

11:17:01   20   check after the fact.

21   **Q.**   Okay. And when you did that as a robustness check

22   after the fact, you did not update your report to let me

23   know that you had done that; is that fair?

24   **A.**   My understand understanding is that you update a

11:17:15   25   report when your conclusions have changed.

Laura Wells, RPR, RMR, CRR, RDR

11:17:23

1   **Q.**   I'm not asking your understanding of what is

2   appropriate. Let's just get to the first step of whether

3   you updated your report to provide that additional

4   information.

5   **A.**   I did not update my report.

6   **Q.**   And so as a result, as we sit here today in the trial

7   of this matter, I haven't had the opportunity to test the

8   methodology or try and recreate the methodology by which

9   you fed your robot partisan data?

11:17:40

10   **A.**   I -- since I already testified that I did not do it as

11   part of this report, what is in the report is complete,

12   and I stand by its conclusions.

13   **Q.**   Does that mean the Court, in your view, should not

14   consider that you -- your statements about providing the

11:17:55

15   robot with partisan data?

16   **A.**   As a matter of law, I'm just not sure whether we

17   should be talking about robustness checks conducted after

18   the report was filed. That's a question for you.

19   **Q.**   Are there -- are there any other important checks you

11:18:11

20   have done to your original report that have gone

21   unreported in an updated report?

22   **A.**   Yes.

23   **Q.**   Speaking of updates, on direct examination yesterday,

24   you testified that there had been no changes in the law

11:18:37

25   since when you provided your initial report and today,

1 right?

2 **A.**   No.

3   MR. STEINER: Objection.

4   MR. KERCHER: Sorry. I misstated. You got me.

11:18:48 5 You got me.

6 BY MR. KERCHER:

7 **Q.**   Yesterday, you testified that there have been no

8 changes in the law that altered your conclusions in your

9 report?

11:18:55 10 **A.**   We could look at the wording. My memory is that I

11 said there had been changes, and that in thinking about

12 those changes, there were no changes in my conclusions.

13 **Q.**   Okay.

14 **A.**   In thinking about the changes in the law, that didn't

11:19:08 15 occasion me to revisit my conclusions.

16 **Q.**   So, for example, the change in the law would be the

17 Fifth Circuit's holding in *Petteway*, which ruled that

18 coalition claims were not cognizable under Section 2,

19 right?

11:19:21 20 **A.**   Right. That's exactly right.

21 **Q.**   There was also the *Milligan* Supreme Court case, right?

22 **A.**   There was.

23 **Q.**   And there, Justice Roberts wrote for the majority that

24 the Court has always understood Section 2 claims as

11:19:33 25 dealing with effects, right?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.**   Correct.

2   Well not always, but, yes.

3 **Q.**   You were an expert in that case, right?

4 **A.**   Yes.

11:19:42   5 **Q.**   Now, you told the Court yesterday that every time you

6 have testified in front of a three-judge panel, the panel

7 has called your work credible or very credible, right?

8 **A.**   Credible or highly credible. That's my recollection.

9 **Q.**   That doesn't mean, of course, that the court has --

11:19:59   10 that every court you have testified before has agreed with

11 you, right?

12 **A.**   That doesn't mean that, right.

13 **Q.**   Justice Roberts, writing for the majority in *Milligan*,

14 wrote at pages 34 and 35 of that opinion [as read:]

11:20:14   15 "Alabama's reliance on the maps created by Dr. Duchin and

16 Dr. Imai is misplaced. For one, neither Duchin's nor

17 Imai's maps accurately represented the districting process

18 in Alabama. Dr. Duchin's maps were based on old census

19 data from 2010 instead of 2020 and ignored certain

11:20:36   20 traditional districting criteria, such as keeping together

21 communities of interest, political subdivisions, or

22 municipalities. And Dr. Imai's 30,000 maps failed to

23 incorporate Alabama's own districting guidelines,

24 including keeping together communities of interest and

11:20:49   25 preserving municipal boundaries.

1   "But even if the maps created by Dr. Duchin and

2   Dr. Imai were adequate comparators, we could not adopt the

3   map comparison test that Alabama proposes. The test is

4   flawed in its fundamentals. Districting involves myriad

11:21:07   5   considerations: compactness, contiguity, political

6   subdivisions, natural geographic boundaries, county lines,

7   pairing of incumbents, communities of interest, and

8   population equality. Yet quantifying, measuring,

9   prioritizing, and reconciling these criteria requires map

11:21:26   10   drawers to make difficult, contestable choices, and it is

11   easy to imagine how different criteria could move the

12   median map toward different distributions, meaning that

13   the same map could be lawful or not depending solely on

14   what the map maker said they set out to do.

11:21:45   15   "Instead, challengers relied on deeply flawed expert

16   reports. And while these experts produced tens of

17   thousands of maps with differently configured districts,

18   they did not offer a single map that achieved the

19   legislature's partisan goal while including a higher B VAP

11:22:02   20   in District 1.

21   "Faced with this record, we must reverse the district

22   court to the racial gerrymandering claim."

23   Did you know Justice Roberts wrote that?

24   **A.**   Are you still reading from what is on the screen, or

11:22:17   25   have you gone past that?

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   That is from the *Milligan* case.

2   Did you know Justice Roberts wrote that?

3   **A.**   Yes. I read it very closely.

4   **Q.**   In the *Alexander v. South Carolina State Conference of*

11:22:30 5 *NAACP*, you were also an expert, right?

6   **A.**   I was.

7   **Q.**   Justice Alito, writing for the majority in that case,

8   at 34 of the opinion, wrote [as read:] "Neither the

9   district court, nor the challenger, cite Dr. Duchin's

11:22:44 10 report to support the racial predominance finding. And

11   that is for good reason. Like Dr. Imai's report, various

12   parts of Dr. Duchin's report did not account for

13   partisanship or core retention."

14   Do you remember that Justice Alito wrote that?

11:23:01 15 **A.**   Distinctly.

16   **Q.**   He did, however, credit Dr. Trende's report in that

17   case, at page 24, saying [as read:] "Indeed, Dr. Sean

18   Trende, the State's expert, showed that District 1 would

19   have voted for the Democratic nominee in 2020 in

11:23:13 20 91 percent of Dr. Imai's simulations. Because Dr. Imai's

21   model fails to track the considerations that govern the

22   legislature's redistricting decision, it is irrelevant

23   that the racial makeup of District 1 in his maps differs

24   from the that in the version of the district in the

11:23:33 25 enacted plan."

Laura Wells, RPR, RMR, CRR, RDR

1   Did you remember that Justice Alito wrote that?

2   **A.**   This looks familiar.

3   MR. KERCHER: Pass the witness.

4   JUDGE GUADERRAMA: Mr. Steiner.

11:23:48   5   **REDIRECT EXAMINATION**

6   BY MR. STEINER:

7   **Q.**   Just a short redirect, Dr. Duchin.

8   There is some testimony about the pairing of

9   incumbents that you were just asked about.

11:24:16   10   Did pairing of incumbents or not pairing of incumbents

11 have any impact on your conclusions?

12 **A.**   So in these -- subsequent to my initial report, I have

13 just testified that I did a number of robustness checks,

14 additional sensitivity analysis. And since I had, indeed,

11:24:34   15 read these sections of the decisions that just came up on

16 cross, I actually took each of those criteria into account

17 one at a time and in combination.

18   So I looked at maps that had as little incumbent

19 pairing as the State's plan. I looked at partisan

11:24:51   20 ensembles created with partisan data up front. I looked

21 at county splits. I looked at county subdivision splits.

22 As I have already testified, that takes into account

23 municipal boundaries, as well as some commuting patterns.

24 That's my belief how the bureau has explained those.

11:25:10   25   I also took into account least change. I created

Laura Wells, RPR, RMR, CRR, RDR

1   alternative ensembles that prioritized districts that

2   resemble the benchmark plan.

3   So having looked at each of these individually and in

4   combination, it changed none of my findings. All of those

11:25:26   5   outlier findings are robust to all of these variations.

6   In fact, the list taken directly from these opinions,

7   particularly in one of Justice Thomas's -- I forget if

8   it's a concurrence or a dissent, but there is a list of

9   things to take into account, and I tried each one.

11:25:45   10   MR. STEINER: And just in terms of least change,

11   if we go back, Steve, to Exhibit 163.

12   Your Honor, I apologize. I think one of the things I

13   failed to do earlier this morning is Dr. Duchin's updated

14   CV actually is in the exhibit list at Exhibit 155. So I

11:26:02   15   would ask for that to be admitted. I don't think we need

16   to go back over her background.

17   JUDGE GUADERRAMA: Mr. Kercher, any objection to

18   155?

19   MR. KERCHER: None, Your Honor.

11:26:11   20   MR. STEINER: And then I would ask to admit 163

21   to 173, which were the exhibits that we used this morning.

22   JUDGE GUADERRAMA: Give me those numbers again.

23   163 to 173?

24   MR. STEINER: Correct. That's what we went over

11:26:22   25   this morning with Dr. Duchin.

Laura Wells, RPR, RMR, CRR, RDR

	1	JUDGE GUADERRAMA: Mr. Kercher.
	2	MR. KERCHER: No objection.
	3	JUDGE GUADERRAMA: All right. 163 through 173
	4	are admitted.
11:26:28	5	BY MR. STEINER:
	6	**Q.** And looking at -- this is -- 163 is the
	7	Tarrant-Dallas -- I think we had pink on the screen this
	8	morning. So if we can look at those two overlay maps.
	9	Do those overlay maps show a type of representation of
11:26:45	10	whether something looks like least change or not?
	11	**A.** That's right. Through this series of before-and-after
	12	comparisons, I think it's fairly clear that least change
	13	wasn't at least a high priority in the creation of the new
	14	plans.
11:27:00	15	**Q.** And you discussed least change in your initial report
	16	in this matter?
	17	**A.** Yeah.
	18	**Q.** There are the maps of the various districts -- the
	19	change of the maps in the various districts in your
11:27:10	20	initial report?
	21	**A.** That's right. The degree of change is discussed in
	22	the initial report. And as I just mentioned, as a recent
	23	robustness check, subsequent to these Supreme Court
	24	decisions, I checked whether --
11:27:21	25	MR. KERCHER: Objection, Your Honor.

Laura Wells, RPR, RMR, CRR, RDR

1   THE WITNESS: Shall I continue?

2   MR. KERCHER: I object to the witness continuing

3   to talk about tests that she analyzed and performed not

4   for the report that she provided and of which we had no

11:27:33   5   notice prior to the beginning of trial.

6   MR. STEINER: He asked about it on cross. This

7   is --

8   MR. KERCHER: I did not. I did not ask her

9   whether she had provided that information to the robot.

11:27:42   10   She volunteered it.

11   And, certainly, had I known that she had done that, my

12   questioning would have been different. We were entitled

13   to that information before it came out on cross or in

14   testimony in any way.

11:27:54   15   JUDGE GUADERRAMA: All right. I'm going to allow

16   the testimony, subject to your objection.

17   THE WITNESS: Where were we?

18   BY MR. STEINER:

19   Q.   Just in terms of -- I think you were explaining what

11:28:07   20   you did with respect to least changed to confirm it didn't

21   affect the opinions you had already offered.

22   A.   I'll be brief.

23   Each of these variants gave materially the same

24   conclusions.

11:28:17   25   Q.   And if we can just look back at your supplemental --

11:28:37

11:29:07

11:29:24

11:29:53

11:30:14

1 sorry, your response report, Exhibit 138, page 14.

2   So in the middle column and in the right-hand column,

3 we're talking about either at least as Trump-favoring or

4 at least as Republican-favoring.

5   Is a sample size of maps of 12,000 or 30,000 or

6 74,000, is that, in your view or in your work as a data

7 scientist, a sufficiently large dataset to form the -- to

8 get the results and form the conclusions you have offered

9 with respect to how this plan compare -- the enacted plan

10 compares to other plans in your ensemble?

11 **A.**   Yes. I think this provides strong evidence.

12 **Q.**   And if there are a lot of questions on cross about

13 using what I think lots of us in the room refer to as heat

14 maps but I think you refer to as choropleth, if that's

15 right, that if a map drawer was drawing the enacted map --

16 the enacted map -- the State's enacted maps using a

17 choropleth of political or partisanship and produced the

18 plans that the State produced with a partisanship shading

19 on, would you -- as a math professor or a data scientist,

20 if one of your graduate students produced that with

21 partisanship as the factor that they were drawing on, how

22 would you evaluate that work?

23 **A.**   Well, I think what the table shows is that the use of

24 partisanship at the precinct level really does not explain

25 the racial attributes of the map.

1 **Q.** And if that map was created from partisanship shading,

2 how good a job did someone do drawing a partisan map?

3 **A.** Yes. I would say they left a lot of partisan

4 gerrymandering opportunity on the table.

11:30:29   5   MR. STEINER: No further questions.

6   JUDGE GUADERRAMA: Mr. Kercher.

7   MR. KERCHER: No additional questions, Your

8 Honor.

9   JUDGE GUADERRAMA: All right. Mr. Quesada is not

11:30:38   10 here.

11   So -- all right. May Dr. Duchin be permanently

12 excused?

13   Do you have questions?

14   MR. DUNN: No. No more questions on the

11:30:49   15 plaintiffs' side.

16   JUDGE GUADERRAMA: All right. Can she be

17 excused?

18   MR. STEINER: Please.

19   MR. DUNN: Please.

11:30:55   20   MR. KERCHER: Yes, Your Honor.

21   JUDGE GUADERRAMA: Dr. Duchin, thanks so much for

22 coming down. You are free to go and excused.

23   THE WITNESS: All right. Thank you.

24   JUDGE GUADERRAMA: Who is your next witness?

11:31:03   25   MR. FOX: Your Honor, the Gonzales defendants are

Laura Wells, RPR, RMR, CRR, RDR

11:31:37

1 going to call Augustin Loredo, who I believe has just

2 walked into the courtroom.

3   JUDGE GUADERRAMA: Good morning, Mr. Loredo. If

4 you would raise your right hand, sir.

5   THE WITNESS: Yes, sir.

6   JUDGE GUADERRAMA: Do you solemnly swear or

7 affirm the testimony that you give in this proceeding will

8 be the truth, the whole truth, and nothing but the truth,

9 so help you God?

11:31:41 10   THE WITNESS: Yes, sir.

11   JUDGE GUADERRAMA: Thank you. Have a seat right

12 here in that chair.

13   THE WITNESS: Thank you.

14   JUDGE GUADERRAMA: And do me a favor. Roll in to

11:31:45 15 the microphone. And if you lean into it, your voice will

16 get louder.

17   THE WITNESS: Yes, sir.

18   **AUGUSTIN LOREDO,**

19 having been first duly sworn, testified as follows:

11:31:50 20   **DIRECT EXAMINATION**

21 BY MR. MEDINA:

22 **Q.**   Good morning, Mr. Loredo.

23 **A.**   Good morning.

24 **Q.**   Thank you for being here.

11:31:56 25   Could you please state and spell your name for the

1 record.

2 **A.** My name is Augustin Loredo, III. A-g-u-s-t-i-n

3 L-o-r-e-d-o.

4 **Q.** Mr. Loredo, what is your race or ethnicity?

11:32:08 5 **A.** Latino.

6 **Q.** Where do you currently live?

7 **A.** In Baytown, Texas.

8 **Q.** What county is that in?

9 **A.** Harris.

11:32:16 10 **Q.** How long have you lived there?

11 **A.** My whole life, except for two years in San Antonio

12 after college.

13 **Q.** What year were you born?

14 **A.** 1974.

11:32:30 15 **Q.** How long has your family lived in Baytown?

16 **A.** My grandfather -- my father's family, his grandfather

17 on his mother's side was there in 1924. His father, my

18 grandfather Augustin, he was there in 1926. My dad was

19 born there in 1930.

11:32:49 20 **Q.** Did they live in Baytown continuously?

21 **A.** No, sir. When my dad turned three, there was a

22 movement called repatriation, where my dad and his family

23 were moved back to Mexico. And my dad came back in 1947.

24 **Q.** Mr. Loredo, where did you go to high school?

11:33:06 25 **A.** Robert E. Lee High School in Baytown.

1   **Q.**   And where did you get your undergraduate degree?

2   **A.**   I have an associate's from Lee College and a

3   bachelor's from the University of Houston, main campus.

4   **Q.**   I think you said you have an associate's from Lee

11:33:19   5   College.

6   Where is that?

7   **A.**   In Baytown.

8   **Q.**   Mr. Loredo, where do you currently work?

9   **A.**   I work at South Houston High School, which is a part

11:33:26   10   of Pasadena ISD.

11   **Q.**   How long have you been a teacher at South Houston High

12   School?

13   **A.**   I just completed my 24th year.

14   **Q.**   And what do you teach there?

11:33:35   15   **A.**   I teach Spanish, Mexican American topics, and I'm the

16   head boys' soccer coach and the head boys' cross-country

17   coach.

18   **Q.**   Mr. Loredo, have you ever held elected office?

19   **A.**   Yes, sir. I was on the Goose Creek Consolidated

11:33:50   20   Independent School District, which is Baytown, in the

21   Highlands area, from approximately 2005 to 2021, 16 years.

22   **Q.**   Where is Highlands in relation to Baytown?

23   **A.**   It's just on the northeast of Baytown, north of I-10.

24   **Q.**   And what was your district within the Goose Creek ISD?

11:34:08   25   **A.**   My district was District 2, which is -- encompasses

Laura Wells, RPR, RMR, CRR, RDR

1   the area I live in, which is considered Old Baytown,

2   Pelly, Eastside, and Goose Creek. It's the older part and

3   southern part of Baytown.

4   **Q.**   Have you ever served in any other community

11:34:25   5   organizations in Baytown?

6   **A.**   Yes, sir. I have served in a few. Currently, I'm the

7   vice president of the Fred Aguilar Promise Center. I'm

8   the vice president of our civic association. I'm a

9   commissioner on the City of Baytown planning and zoning

11:34:40   10   commission. And I'm on the board of directors for the

11   Baytown parks and rec.

12   **Q.**   What is the Fred Aguilar Promise Center?

13   **A.**   It's a community center that provides children and

14   families with support in different ways. We do things

11:34:53   15   like tutoring. Right now, this week, I just had a

16   leadership program where we would take young people to

17   visit colleges and to talk to elected officials and learn

18   about different things. We have a tutoring program. And

19   during times of -- like, during Hurricane Beryl, we had

11:35:08   20   food drives. During COVID, we had mass drives and school

21   supplies.

22   **Q.**   Do you run that leadership program that you just

23   mentioned?

24   **A.**   Yes, sir. I do run that.

11:35:18   25   **Q.**   So, Mr. Loredo, how would you describe the ethnic or

Laura Wells, RPR, RMR, CRR, RDR

1   racial composition of Baytown today?

2   **A.**   Baytown is a minority-majority area, but the biggest

3   group there is the Latino community.

4   **Q.**   Has the Latino population grown in recent years?

11:35:39   5   **A.**   Yes, sir. Exponentially. It's grown a lot.

6   **Q.**   How would you describe the socioeconomic status of

7   most of your neighbors in Baytown?

8   **A.**   Most of my neighbors are people that work in industry,

9   in the refineries. They are a lower middle-class

11:35:58   10   community, blue-collar workers, people that work --

11   because of our closeness to the refinery, work relatively

12   close to where they live.

13   **Q.**   So would you say that the oil industry and the

14   refineries are important to Baytown?

11:36:12   15   **A.**   Very important.

16   **Q.**   Other than the refineries, of course, what kinds of

17   businesses are there in Baytown?

18   **A.**   Well, there is a lot of -- if you look at local

19   business, there is a lot of Latino things, like, meat

11:36:29   20   market. There is a lot of restaurants -- Mexican

21   restaurants. In addition to, like, you know, things --

22   there's, HEBs and Krogers, and things. But even HEB has

23   a -- like, a subsidiary called Joe V's that is

24   predominantly catered toward Latinos, and there is one in

11:36:46   25   Baytown.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   Mr. Loredo, what church do you attend?

2   **A.**   I attend St. Joseph Catholic church.

3   **Q.**   Are there any other churches in Baytown?

4   **A.**   Yes. I grew up in Guadalupe. They are about a half

11:37:02   5   mile from each other. But, honestly, we started going to

6   St. Joseph because my in-laws went there, and we got to

7   see them. Guadalupe is a lot more Latino than St. Joseph.

8   Guadalupe, if you went there at mass 30 minutes before,

9   you are sitting outside, literally. So St. Joseph, you

11:37:18   10   are inside. And it's down the street from our house.

11   In addition to that, they, actually, recently started

12   doing a Spanish service at 2:00 because of the amount of

13   people that go to Guadalupe.

14   **Q.**   And does Guadalupe do mostly masses in Spanish?

11:37:34   15   **A.**   Yes. They do all masses in Spanish, except one at

16   10:30 on Sundays, which is English-speaking.

17   **Q.**   And St. Joseph's, you said?

18   **A.**   It's predominantly English-speaking. They do one mass

19   in Spanish, Sundays at 2:00 in the afternoon.

11:37:50   20   **Q.**   Mr. Loredo, based on your service on the Goose Creek

21   ISD board and your involvement in the community, do you

22   feel as though you have an understanding of the issues of

23   concern to families in Baytown?

24   **A.**   Yes, sir. When I was on the school board, I grew

11:38:09   25   up -- I live in the community I grew up in. And I

Laura Wells, RPR, RMR, CRR, RDR

                1 mentioned earlier, my dad was born in Baytown. He was

                2 born in an area that's about five streets, five blocks,

                3 from where I live now. My family has been there.

                4   And because of that, you know, a lot of the people

11:38:23   5 that I served as a school board member, a lot of the

                6 families were people I knew from when I was a child. And

                7 so they would oftentimes come up to me and talk to me

                8 about different problems they are having. And even beyond

                9 the school, because of my work in the City, they come to

11:38:37   10 me whenever they have any issues.

               11 **Q.**   So based on your work on the school board, do you feel

               12 as though language barriers are an issue of concern for

               13 parents and families in the school district?

               14 **A.**   Yes, I believe so.

11:38:55   15 **Q.**   How do language barriers affect parents and families

               16 in the Goose Creek ISD?

               17 **A.**   I believe that everybody wants their children to

               18 succeed. And sometimes when it deals with trying to

               19 do -- make sure -- trying to work with how to make your

11:39:13   20 kid be successful in school, dealing with discipline, a

               21 lot of times, it's hard for parents to interact with

               22 administrators and teachers. And, oftentimes, they bring

               23 in people that are -- you know, paraprofessionals that are

               24 good people, but they don't necessarily have -- know the

11:39:29   25 academic language needed to communicate with these

                             Laura Wells, RPR, RMR, CRR, RDR

1 parents. Because the parents have language, it's just

2 that they don't share the same language as some of the

3 people they are dealing with.

4 **Q.** You just mentioned school discipline. Is that also an

11:39:41 5 issue of concern in the Goose Creek ISD?

6 **A.** Yes, sir. It's an issue -- I think it's a big issue

7 across our state.

8 **Q.** What concerns about school discipline, in particular,

9 have you heard?

11:39:57 10 **A.** I think that in regards to school discipline, it's --

11 you know, the biggest advocate for a child is their

12 parents. And, you know, if you can't communicate -- or

13 even the biggest ally that a teacher or administrator have

14 is also the parent. But if they are not able to

11:40:13 15 effectively communicate with the parent of the child that

16 they are trying to, you know, create corrective action

17 for, then it becomes an issue in helping discipline the

18 child so that they don't continue to make the same mistake

19 or continue to have the same action.

11:40:28 20 **Q.** Do parents in the Goose Creek ISD often work more than

21 one job?

22 **A.** Yes, they do.

23 **Q.** Would you say that environmental issues are an issue

24 of concern for folks in Baytown?

11:40:45 25 **A.** We live -- my front porch, I can see ExxonMobil. We

Laura Wells, RPR, RMR, CRR, RDR

1   have also Chevron and Covestro. And Exxon and Chevron,

2   and especially -- you know, they have, like, interruptions

3   in their -- in the way that they handle their chemicals,

4   and sometimes they have little burps.

11:41:01   5   The other day, maybe about a month ago, they had

6   something happen. And it was nighttime and I was -- I

7   like to sit on my porch. And it looked like daytime

8   outside because of the amount of -- because they had to

9   burn off some extra things into the environment.

11:41:13   10   So industrial-environmental issues are a big deal in

11   Baytown and that surrounding area.

12   **Q.**   Is flooding and infrastructure a big issue of concern

13   in Baytown?

14   **A.**   It is also. You know, I live in an area that's

11:41:27   15   considered a little bit older. So we have some issues

16   with infrastructure as far as, like, water and stuff.

17   There has been a couple of times when a pipe has burst,

18   and they can't -- because of the old -- because of the

19   age, they have to shut down a lot of city blocks to be

11:41:41   20   able to fix it.

21   Flooding, you know, that's one of, probably, Harris

22   County's -- our precinct's biggest expenditure is the

23   flooding. Because you -- we have seen with Harvey and

24   most recently Beryl where a lot of houses were flooded and

11:41:55   25   a lot of areas were flooded. And so they are having to

Laura Wells, RPR, RMR, CRR, RDR

1 create areas to hold rainwater and things like that.

2 **Q.**   So let's pull up Joint Exhibit 1315, which should be

3 the District Viewer map report package for Plan C-2198.

4   MR. MEDINA: And if we can turn, Stephen, to

11:42:15 5 page 15, please.

6 BY MR. MEDINA:

7 **Q.**   So, Mr. Loredo, I will represent to you that this Plan

8 C-2198 is the Gonzales plaintiffs' demonstration map for

9 the purposes of this litigation.

11:42:28 10   So do you recognize this as a sort of close-up view of

11 the Harris County area?

12 **A.**   Yes, sir.

13 **Q.**   And do you see Baytown on this map?

14 **A.**   Yes, sir. It's on the east side.

11:42:42 15   MR. MEDINA: Stephen, can we zoom in, please, to

16 focus on the CD-38 area. Perfect.

17 BY MR. MEDINA:

18 **Q.**   So I see it labeled on the map here, Mr. Loredo, but

19 just for the record, can you describe roughly the

11:42:54 20 boundaries of Baytown.

21 **A.**   Yes, sir. In a very rough way, it's south of 1492.

22 It follows west of 146 -- state Highway 146, all the way

23 south. And it goes everything east of the San Jacinto

24 River.

11:43:11 25 **Q.**   And on this map, is Baytown in proposed District 38?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.**   Yes, sir.

2 **Q.**   Do you also see South Houston on this map?

3 **A.**   Yes, sir, I do.

4 **Q.**   Is that where South Houston High School is, where you

11:43:25 5 teach?

6 **A.**   Yes, sir, it is.

7 **Q.**   Is that also in District 38?

8 **A.**   Yes, sir, it is.

9 **Q.**   Can you also, similarly, just describe for the Court

11:43:34 10 the rough boundaries of the town of South Houston.

11 **A.**   South Houston runs down Richey Road. It goes down

12 Richey Road, I guess, west of Shaver. And it goes all the

13 way down to 45, at which it becomes Winkler and goes south

14 to about Allen-Genoa, then goes up to Shaver.

11:44:03 15 **Q.**   Having worked at South Houston High School for over --

16 or, I guess, about 24 years at this point, do you feel as

17 though you have a lot of familiarity with the community of

18 South Houston?

19 **A.**   Yes, sir. I go there pretty often, even when I'm not

11:44:16 20 at work. And I see a lot of my former students. And now

21 I even have students -- children of my former students

22 that are my students. I think I said that right.

23 **Q.**   Is South Houston High School a majority-Latino school?

24 **A.**   Yes, sir. I believe they are 80 percent above -- or

11:44:33 25 plus the 80 percent.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   And is the broader South Houston community a

2   majority-Latino community?

3   **A.**   Yes, sir, it is.

4   **Q.**   So based on what you've observed in that community,

11:44:43   5   how would you describe the socioeconomic status of the

6   residents of that community?

7   **A.**   It's very similar to Baytown, lower middle-class. The

8   people that live in homes, a lot of the kids, especially

9   the young men, they go work in the refineries. And if

11:44:58   10   they are not working in the refineries, they are working

11   in building -- construction projects that are supporting

12   the refineries, like homes.

13   There are -- the school serves more than South

14   Houston. The part of Houston and part of Pasadena that it

11:45:13   15   serves, there's a lot of apartments, and those are

16   lower-income families. They definitely work more than one

17   job.

18   **Q.**   So would you say that the oil industry and the

19   refineries in the area are also important to the residents

11:45:28   20   of South Houston?

21   **A.**   Yes, sir. Pasadena ISD and Baytown, similarly, have

22   partners with Lee College in Baytown and San Jacinto

23   College in Pasadena ISD that deal with -- specifically

24   with industrial, like welders, machinists, pipefitters,

11:45:46   25   those kind of work, because of the amount of jobs that are

Laura Wells, RPR, RMR, CRR, RDR

1 there.

2 **Q.**   What kinds of small businesses are there in South

3 Houston?

4 **A.**   South Houston has some very light industrial companies

11:45:58 5 that support a lot of the bigger companies that are

6 working with the oil and chemical, but they also have a

7 lot of mom-and-pop restaurants, taquerias, meat markets,

8 bakeries, supermarkets that are more catered to the Latino

9 community.

11:46:18 10 **Q.**   So as a teacher at South Houston High School who is

11 active in this community, do you feel as though you

12 understand some of the issues of concern to that

13 community?

14 **A.**   Yes, sir. I do.

11:46:30 15 **Q.**   We spoke earlier about language barriers and school

16 discipline in the Goose Creek ISD where you served on the

17 board.

18   Was this also an issue of concern in South Houston?

19 **A.**   Yes, sir. And I have been witness to helping a lot of

11:46:47 20 families deal with trying to interpret and trying to

21 understand and be an advocate for a lot of the students

22 that sometimes have been put in situations that could have

23 been cleared up a lot easier.

24 **Q.**   Do a lot of the parents of your students work more

11:47:01 25 than one job?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.** Yes, they do.

2 **Q.** Does that make it more difficult for them to interact

3 with the school system?

4 **A.** It definitely does. It's hard for them, too, because

11:47:13   5 they work two jobs. They are not off when the school is

6 off. And maybe they are off from one job, but they are

7 working at the other.

8   So it's -- the parent participation is a little bit

9 low, not because they don't want to interact with the

11:47:27   10 schools, but it's very difficult for them to interact with

11 the schools.

12 **Q.** Are environmental issues related to the local industry

13 also an issue of concern in South Houston?

14 **A.** Yes. And as far as the industrial park goes, I can

11:47:42   15 remember a couple of times, not very often, but when we've

16 had to shut down because there was a leak somewhere, and

17 it was potentially coming all the way to South Houston.

18 Because there is -- the 225 corridor is all industry. And

19 environmentally, when Harvey hit, there was a whole

11:48:00   20 neighborhood of our students whose houses were practically

21 underwater, and it was very hard for them to even come

22 back to school.

23 **Q.** So would you say flooding is an issue as well?

24 **A.** It is a very big issue.

11:48:11   25 **Q.** And I just want to clarify something you said earlier.

Laura Wells, RPR, RMR, CRR, RDR

1   You said we had to shut down because of I think it was

2   a chemical leak.

3   Was that the school you were referring to?

4   **A.**   Yes.   The school.

11:48:28   5   **Q.**   Mr. Loredo, can you tell the Court the name of the

6   community that's just east of South Houston?   It's labeled

7   here on this map south of 225 and just west of -- I think

8   that's 146, but I'm not positive.

9   **A.**   It's Beltway 8.

11:48:45   10   **Q.**   Beltway 8.   That's Beltway 8.   You are right.

11   **A.**   That's Pasadena.

12   **Q.**   Thank you.

13   Do you drive through Pasadena on your way to work?

14   **A.**   Every day.

11:48:57   15   **Q.**   How do you go?

16   **A.**   I go 225 and then I exit Beltway 8.

17   **Q.**   About how long is that drive?

18   **A.**   It's about a 20-mile drive, but it's about a

19   30-minutes drive.

11:49:11   20   **Q.**   Other than driving through it to get to South Houston

21   High School, do you ever have occasion to visit Pasadena?

22   **A.**   Like I said earlier, even when I'm off -- I was in

23   Pasadena like two or three times last week or this -- I'm

24   sorry.   This week, we were there just for different

11:49:28   25   reasons.   We shop there.   We eat there.   They have a

Laura Wells, RPR, RMR, CRR, RDR

1 really great bakery there.

2 **Q.** And how would you describe the ethnic or racial makeup

3 of the Pasadena community?

4 **A.** It's predominantly Latino.

11:49:41 5 **Q.** And how would you describe the company of that

6 community?

7 **A.** Same thing. There is areas of our school district

8 that is considered part of the school district, but it's

9 not in Pasadena proper.

11:49:51 10   Pasadena proper is a lot -- you know, they have the

11 Best Buy and the HEBs, but they also have Michoacána's.

12 And, you know, they have Tepatitlan Bakery and HEB. As I

13 mentioned earlier, not only do they have a Joe V's, but

14 they have a Mi Tienda to cater specifically to the Latino

11:50:12 15 community.

16 **Q.** Are there any churches in Pasadena?

17 **A.** Yes. There is churches -- you know, there's many

18 churches everywhere. But there is two Catholic churches

19 that we're familiar with, St. Pius and San Augustine. I'm

11:50:26 20 sorry -- San Juan Diego. I was thinking of another

21 church. But, yes, San Juan Diego and St. Pius.

22 **Q.** Do those bear any similarity to the churches that you

23 attended the Baytown?

24 **A.** Yes, very -- for many years -- the reason I was

11:50:41 25 thinking San Augustine is because the order that was

Laura Wells, RPR, RMR, CRR, RDR

1   serving Guadalupe when I was growing up were the

2   Augustinians. And San Juan is served by the Augustinan

3   order. So they are served -- they are an order that

4   serves Spanish-speaking communities.

11:50:57   5   In the past, we have shared even priests. Like, we

6   have had even the same priests.

7   **Q.**   I won't walk -- sorry. Can you put that pull up.

8   I won't walk you through all of these, Mr. Loredo, but

9   do you see there are some other communities labeled on

11:51:12   10   this map. I see Galena Park and Jacinto City.

11   Are those roughly similar to the communities that you

12   have already described?

13   **A.**   Yes, sir. Same kind of businesses at a smaller level.

14   A lot of the people there working in the -- they are

11:51:29   15   touched somehow by the oil industry.

16   MR. MEDINA: Now, Stephen, can we take this down

17   and put up Joint Exhibit 1048. And then can we turn to

18   page 33. And I will represent that this is Plan C-2193,

19   which is the enacted congressional plan under Senate Bill

11:51:53   20   6.

21   BY MR. MEDINA:

22   **Q.**   Do you recognize this, Mr. Loredo, as, again, as a

23   close-up of the Harris County area?

24   **A.**   Yes, sir.

11:52:02   25   **Q.**   Okay. And do you see the green District 29?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.** Yes, sir, I do.

2 **Q.** And do you see the -- I guess, it's orange District

3 36?

4 **A.** Yes, sir.

11:52:15 5   MR. MEDINA: Stephen, can we zoom into the same

6 area that we were just looking at before on this map.

7   That's perfect. Thank you.

8 BY MR. MEDINA:

9 **Q.** So, Mr. Loredo, on this map, what district is South

11:52:32 10 Houston in?

11 **A.** In 29.

12 **Q.** And what district is Baytown in?

13 **A.** 36.

14 **Q.** And what district is Pasadena in?

11:52:43 15 **A.** It seems to be, according to this map, in both, maybe,

16 29 and 36. It looks like it's split.

17 **Q.** So staying on this map --

18   MR. MEDINA: Can we zoom out, Stephen, and go a

19 little bit north. That works.

11:53:06 20 BY MR. MEDINA:

21 **Q.** Staying on this map, do you see that major highway

22 north of Baytown on the map?

23 **A.** Is that I-10?

24 **Q.** That was going to be my next question.

11:53:18 25   Is that I-10?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   Yes, sir.

2   **Q.**   And do you also see part of Highway 146 on this map?

3   It would be sort of in the northeast.

4   **A.**   Yes, sir.

11:53:33   5   **Q.**   What is the community that's just northeast of that

6   intersection?

7   **A.**   Mont Belvieu.

8   **Q.**   Do you ever have occasion to visit Mont Belvieu?

9   **A.**   I go to Mont Belvieu once a year.

11:53:48   10   **Q.**   What brings you there?

11   **A.**   One of my best friends organizes a comic book

12   convention there, and I go to that to support him once a

13   year.

14   **Q.**   How would you describe the racial or ethnic makeup of

11:54:02   15   Mont Belvieu?

16   **A.**   It's a little economically affluent, more Anglo.

17   **Q.**   And what kinds of businesses are in Mont Belvieu?

18   **A.**   I was there a few months ago. It's part of Barbers

19   Hill ISD. They have an HEB but, it is not the same kind

11:54:18   20   of HEB. They have, I think, like, a Dutch Brothers there.

21   They have more kinds of businesses that cater to -- there

22   is different businesses that cater to -- it's the same

23   kind of thing, but just different -- different brands that

24   have businesses.

11:54:37   25   **Q.**   When you say there is an HEB, but it's different from

Laura Wells, RPR, RMR, CRR, RDR

1   the HEB in Baytown, what do you mean?

2   **A.**   I don't shop at that HEB. There is -- you know, I

3   think businesses, one of the things they do is they do a

4   study of who lives where they build. And maybe a lot of

11:54:52   5   the products -- or a lot of the products that they -- that

6   I consume would not be at that HEB.

7   **Q.**   Okay. So, Mr. Loredo, we identified earlier that

8   Baytown is in Congressional District 36 on this enacted

9   map.

11:55:08   10   Do you know your current congressman is in

11   Congressional District 36?

12   **A.**   Yes. It's Brian Babin.

13   **Q.**   Do you know where Congressman Babin lives?

14   **A.**   No. No, sir.

11:55:20   15   **Q.**   Well, I can represent to you, Mr. Loredo, that

16   Congressman Babin is from Woodville.

17   Do you know what county that's in?

18   **A.**   Tyler.

19   **Q.**   I can represent to you that Woodville is in Tyler

11:55:35   20   County.

21   Do you see Woodville or Tyler County on this map?

22   **A.**   No, sir.

23   MR. MEDINA: Can we turn to page 17 of this

24   exhibit please, Stephen. And then can we zoom in on the

11:55:49   25   sort of broader Southeast Texas area there. A little bit

Laura Wells, RPR, RMR, CRR, RDR

1   further east.

2   Okay. Can we do -- sorry. A little bit further

3   northeast so we get Harris County and Tyler County in

4   there. That works.

11:56:04   5   BY MR. MEDINA:

6   **Q.**   Do you see Tyler County on this map, Mr. Loredo?

7   **A.**   Yes, sir.

8   **Q.**   So let's leave that up for a bit.

9   Have you ever been to Woodville?

11:56:21 10   **A.**   I went once at around 1994.

11   **Q.**   And what brought you there?

12   **A.**   I dated a young lady whose mom lived there.

13   **Q.**   Have you been back since?

14   **A.**   No.

11:56:36 15   **Q.**   Why not?

16   **A.**   I don't have any business in Woodville. No need.

17   It's kinds of in the middle of nowhere.

18   **Q.**   Understanding that it's been a while since you have

19   been there, would you describe Woodville as an industrial

11:56:54 20   community?

21   **A.**   No. It's more rural. There is a lot of woods.

22   **Q.**   Have you ever been to Silsbee?

23   **A.**   Yes.

24   **Q.**   Do you know what county Silsbee is in?

11:57:10 25   **A.**   It's in Hardin County.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   Okay. Do we see Hardin County on this map?

2   **A.**   Yes, sir. I do.

3   **Q.**   Could you describe to the Court, just relative to some

4   of the other counties we have discussed, where it is?

11:57:20   5   **A.**   Well, it's south of Tyler. And it's two -- two

6   counties above Harris.

7   **Q.**   What brings you to Silsbee?

8   **A.**   My cousin moved there a long time ago. And so I go

9   visit him -- it's been at least two years since I have

11:57:39   10   gone to his house, but I go about once a year when they

11   have something for the kids.

12   **Q.**   And is Hardin County, along with Tyler County and

13   Baytown, part of CD-36 on this map?

14   **A.**   Yes, it is.

11:57:54   15   **Q.**   Based on your observations, how would you describe the

16   ethnic or racial makeup of Silsbee?

17   **A.**   The times that I have gone to Silsbee I see a more

18   Anglo population.

19   **Q.**   Would you say that it has an industrial economy, along

11:58:11   20   the same lines as Baytown and Pasadena?

21   **A.**   No, sir. It feels like it's more rural. On the way

22   there, you pass a lot of farmland.

23   **Q.**   Mr. Loredo, you testified earlier you're very active

24   in your community. You serve on various boards and

11:58:29   25   community organizations.

Laura Wells, RPR, RMR, CRR, RDR

1   When you are doing that work, do you often attend

2 events with elected officials?

3 **A.**   Yes, I do.

4 **Q.**   Who are some of the elected officials that you have

11:58:39   5 interacted with in that work?

6 **A.**   Our State Representative Ana Hernandez, our previous

7 State Representative Mary Ann Perez, Christina Morales,

8 our County Commissioner Adrian Garcia, our County Judge

9 Lina Hidalgo. I see State Representative Briscoe Cain,

11:59:05 10 because he doesn't represent me, but he represents other

11 parts of Baytown. I've seen him at some of the events, as

12 well, along with local elected officials from Goose Creek,

13 from the city of Baytown, and from Lee College.

14 **Q.**   Have you ever seen Congressman Babin at any events in

11:59:25 15 your community?

16 **A.**   No, sir. In all the years that I have been doing --

17 that I have gone to events, no, sir.

18 **Q.**   Have you ever met Congressman Babin?

19 **A.**   No, sir.

11:59:35 20 **Q.**   Would you say that you have a good, working

21 relationship with any other members of Congress?

22 **A.**   When our -- Congresswoman Sylvia Garcia, she used to

23 be our county commissioner. She was our state senator.

24 And she worked in a lot in Baytown with us. The last time

11:59:53 25 when she was our senator, when she was -- she gave -- we

Laura Wells, RPR, RMR, CRR, RDR

 1 did a backpack school drive through the Promise Center,

 2 and she was one of the people that helped us with that.

 3 **Q.**   Do you think, Mr. Loredo, that to represent your

 4 community effectively, your member of congress needs to be

 5 Latino?

 6 **A.**   No, sir.

 7 **Q.**   Have you ever had a member of congress who was not

 8 Latino?

 9 **A.**   Yes. We used to have Gene Green as our congressman,

10 and he was re-elected several times because everybody

11 liked him. My mom thought he was the greatest thing.

12 **Q.**   Mr. Loredo, you are -- are you a plaintiff in this

13 lawsuit?

14 **A.**   Yes, sir, I am.

15 **Q.**   What do you hope to achieve through this case?

16 **A.**   I think it's important that people that represent us

17 as in -- as people in this country should know our

18 concerns. I mean, I'm sure that there are very important

19 concerns in Woodville and East Texas and all the way to

20 Louisiana that are very important. We have very important

21 issues, as well. They are not better. They are not

22 worse. They are just different. And if somebody knows

23 the area that they represent quite well, they are going to

24 know specifically what things are needed to make sure that

25 those areas are effective and provide for the people that

Laura Wells, RPR, RMR, CRR, RDR

1   live in that community -- in those communities.

2   MR. MEDINA: Thank you. I have no further

3   questions for Mr. Loredo, and I will pass the witness.

4   JUDGE GUADERRAMA: Mr. Tebo -- oh, Mr. Fox.

12:01:34   5   MR. FOX: No. I have no questions. I was just

6   letting Mr. Medina face the other way.

7   JUDGE GUADERRAMA: Mr. Tebo.

8   **CROSS-EXAMINATION**

9   BY MR. TEBO:

12:01:50   10   **Q.**   Good afternoon, Mr. Loredo.

11   **A.**   Good afternoon, sir.

12   **Q.**   Mr. Loredo, is it fair to say you are proudly from

13   Baytown?

14   **A.**   I am proudly from Baytown.

12:02:01   15   **Q.**   And I think I heard you testify that you have lived

16   there for nearly all your life?

17   **A.**   Yes, sir. That is correct.

18   **Q.**   So that means that you reside in currently enacted

19   Congressional District 36, right?

12:02:13   20   **A.**   Correct.

21   **Q.**   And if I refer to Congressional District 36 as CD-36,

22   you'll understand what I'm referring to?

23   **A.**   Yes, sir.

24   **Q.**   So it is certainly true that since at least 2019, you

12:02:31   25   have only resided in Baytown; is that fair?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.** That is correct. Yes, sir.

2 **Q.** You have never lived, for example, in Tarrant County?

3 **A.** No, sir.

4 **Q.** Is it fair to say that you are fairly politically

12:02:47 5 engaged?

6 **A.** Yes, sir.

7 **Q.** So I assume that you vote in local elections in

8 Baytown; is that right?

9 **A.** Yes, sir, I do.

12:02:54 10 **Q.** Do you know who the current mayor of Baytown is?

11 **A.** Yes, sir.

12 **Q.** Would that be Charles Johnson?

13 **A.** That is correct.

14 **Q.** And Mr. Johnson is African American; is that right?

12:03:05 15 **A.** That is correct.

16 **Q.** I assume you are also familiar with the makeup of

17 Baytown city council?

18 **A.** Yes, sir, I am.

19 **Q.** Is it right that Baytown city council has just six

12:03:19 20 seats?

21 **A.** Yes, that is true.

22 **Q.** And one seat is occupied by Laura Alvarado; is that

23 right?

24 **A.** She is my councilwoman, yes, sir.

12:03:27 25 **Q.** And Ms. Alvarado is Hispanic?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.** Yes.

2 **Q.** And James Franco is also on the city council?

3 **A.** That is correct.

4 **Q.** Mr. Franco is Hispanic?

12:03:37 5 **A.** I know Mr. Franco. We have had a couple of

6 conversations. I really couldn't tell you -- by looking

7 at him, I can't tell you. I haven't had that history with

8 him.

9 **Q.** That's fair.

12:03:49 10   Kenrick Griffith is also on Baytown city council; is

11 that right?

12 **A.** Yes, sir. Mr. Griffith is on city council.

13 **Q.** And Mr. Griffith is African American?

14 **A.** Correct.

12:04:03 15 **Q.** Is it fair to say that there are several Hispanic

16 members of the Goose Creek ISD school board?

17 **A.** I believe there are two.

18 **Q.** And you yourself formerly served on the school board?

19 **A.** I was the only Latino school board trustee at that

12:04:20 20 time.

21 **Q.** And, in fact, you served on the school board for, I

22 think you said, 16 years; is that right?

23 **A.** Correct.

24 **Q.** From about 2005 to 2021, you said?

12:04:29 25 **A.** About.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   That's an impressive record.

2   And that means you were re-elected several times

3   during that tenure, I believe; is that right?

4   **A.**   I ran unopposed.

12:04:40   5   **Q.**   You were still elected, though, right?

6   **A.**   Yes, sir.

7   **Q.**   Now, Baytown is largely located within Harris County,

8   right?

9   **A.**   Correct. There is part of it that is part Chambers,

12:04:53   10   and it's growing a lot on that area.

11   **Q.**   Yeah. But the vast majority of it is within the

12   Harris County county line, right?

13   **A.**   Yes, sir.

14   **Q.**   And Harris County, the county judge is Lina Hidalgo;

12:05:13   15   is that right?

16   **A.**   The county judge is, right.

17   **Q.**   And judge Hidalgo is Hispanic, right?

18   **A.**   Yes.

19   **Q.**   I believe I heard you testify that the Latino

12:05:23   20   population of Baytown had grown markedly in the last two

21   decades; is that right?

22   **A.**   I couldn't give you, like, an exact percentage, but it

23   has grown a lot. Just by looking at the businesses and

24   the schools and the makeup, yes.

12:05:42   25   **Q.**   And you'll agree with me that people tend not to move

Laura Wells, RPR, RMR, CRR, RDR

                    1 to places where they think that they will be oppressed or

                    2 discriminated against, right?

                    3 **A.**   I think people -- that is mainly true. I think people

                    4 go where there is jobs.

12:06:00   5 **Q.**   Now, as the maps are currently drawn, nearly all of

                    6 Baytown falls within CD-36, right?

                    7 **A.**   I think all of it. Yes, sir.

                    8 **Q.**   And that allows the vast majority of Baytown residents

                    9 to be represented by the same congressman, right?

12:06:24   10 **A.**   Yes, sir.

                   11 **Q.**   And you are proud to hail from Baytown, and you are

                   12 proud to call it home?

                   13 **A.**   Yes, sir.

                   14 **Q.**   And would you agree that part of that pride is because

12:06:36   15 Baytown is sort of its own distinct community?

                   16 **A.**   I think that Baytown, for me, it holds a lot of my

                   17 family's history, and it holds a lot of the people -- I'm

                   18 proud of Baytown because the people that live there are

                   19 people that I think have good -- good hearts and want to

12:07:00   20 make community better. I work with a lot of people that

                   21 want to make their community succeed. I don't know if

                   22 it's necessarily -- what was it? Tell me the exact term

                   23 that you stated, that I would be proud because of...?

                   24 **Q.**   Just whether you would consider Baytown to be a

12:07:18   25 community -- a community that allows its residents to feel

                                      Laura Wells, RPR, RMR, CRR, RDR

1   that they are part of a single distinct community.

2   **A.**   I think that it's more about the people. I'll give

3   you an example, of where I work at, at South Houston, I

4   have been involved in that community, with those families,

12:07:34   5   for many years. I'm very proud to work in South Houston,

6   as well, because I'm very proud of the people that live

7   there and work there.

8   **Q.**   And that sense of shared enterprise that you describe

9   Baytown residents as having, would you say that that

12:07:51   10   supports a sense of community amongst Baytown residents?

11   **A.**   Yes, sir.

12   **Q.**   And I think you also testified that Baytown is an oil

13   refining town; is that right?

14   **A.**   Yes, sir. It's -- Baytown has -- there are two -- it

12:08:08   15   has the refinery, and next door has the chemical plant,

16   which is Baytown Olefins.

17   **Q.**   A working-class, fair to say?

18   **A.**   Yes, sir, it is.

19   **Q.**   And I heard you just mention a few of the large

12:08:23   20   industrial districts that are located in and around the

21   city of Baytown that have major -- do they have major oil

22   refining operations in them?

23   **A.**   Well, you have -- it's all related. It's not -- maybe

24   not necessarily oil. There is a lot of -- one of the

12:08:39   25   bigger industries that's growing right now is logistics.

1   But a lot of the different companies are -- they support

2   the oil and gas. But there is also a lot of -- the ship

3   channel provides a lot for that.

4   But if you look at the -- if you start on -- in

12:08:58   5   Baytown, and you go west down 225 it's largely industrial.

6   You can't drive down 225 and look north and not see

7   industry.

8   **Q.**   I've done that myself, so I know that you are telling

9   me the truth.

12:09:13   10   Fair to say it's a heavy industrial area?

11   **A.**   Yes, sir.

12   **Q.**   And one of those significant heavy industries is oil

13   processing?

14   **A.**   Correct.

12:09:24   15   **Q.**   In fact you may be aware, or are you aware, that the

16   Chevron Corporation has its largest refinery plant right

17   outside Baytown?

18   **A.**   Yes, sir.

19   **Q.**   Inside the Cedar Port Industrial Park?

12:09:38   20   **A.**   Correct.

21   **Q.**   Are you aware that the Cedar Port Industrial Park is

22   the largest industrial park in the United States of its

23   type?

24   **A.**   I wasn't familiar with that, but I know it's really

12:09:53   25   big.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   And kind of as a general matter, these oil refineries

2   are major employers of Baytown residents, right?

3   **A.**   That is correct.

4   **Q.**   So it's fair to say that the local economy -- I mean,

12:10:06   5   Baytown's local economy depends on oil and gas processing?

6   **A.**   Yes, sir.

7   **Q.**   And I think you mentioned to me that many of your

8   friends and neighbors are employed by these refinery

9   operations?

12:10:19   10   **A.**   Yes, sir.

11   **Q.**   Would you also agree with me that work and employment

12   are vital to any community?

13   **A.**   Yes, sir.

14   **Q.**   Including to Baytown?

12:10:39   15   **A.**   Yes, sir.

16   **Q.**   And congressional 36, CD-36, keeps these key

17   industrial areas together with the city of Baytown within

18   one congressional district, right?

19   **A.**   Yes, sir.

12:10:51   20   **Q.**   And you are a plaintiff in this case, you testified,

21   right?

22   **A.**   Correct.

23   **Q.**   And you are a plaintiff together with Ms. Cecilia

24   Gonzales, Jerry Shafer, and various other individuals?

12:11:08   25   **A.**   Yes, sir.

Laura Wells, RPR, RMR, CRR, RDR

1 **Q.** So if I refer to you together with these individuals

2 as the Gonzales plaintiffs, you'll know who I am referring

3 to?

4 **A.** Yes, sir.

12:11:14 5 **Q.** And you were asked a little bit on direct, so I

6 suppose you are familiar with Gonzales plaintiffs'

7 demonstrative Congressional District 38?

8 **A.** Yes.

9 **Q.** And that's also -- could also be called Plan C-2198,

12:11:32 10 right?

11 **A.** I'm going to say I'm not sure, but okay.

12   MR. TEBO: Brian, would you bring up the Google

13 Earth demonstrative with the overlay of C-2198.

14 BY MR. TEBO:

12:12:18 15 **Q.** Now, I know the coloring is a little less vivid than

16 plaintiffs' demonstrative was, but do you recognize the

17 easternmost boundary of CD-38 on this demonstrative map?

18 **A.** The which boundary?

19 **Q.** The easternmost?

12:12:33 20 **A.** Is that where the yellow line ends, I guess?

21 **Q.** That's where, like, the yellow shading ends.

22 **A.** Yes.

23 **Q.** And you know about -- where about Baytown is on this

24 map; is that right?

12:12:44 25 **A.** Correct.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   And do you see a red sort of button pin on the map?

2   **A.**   Yes. But I don't think Chevron is there.

3   **Q.**   Well, do you see that it is labeled as Cedar Port

4   Industrial Park?

12:13:01   5   **A.**   Correct. But that is not where Chevron is.

6   **Q.**   I will represent to you that that is, in fact, where

7   Cedar Port Industrial Park is located.

8   **A.**   Okay.

9   **Q.**   And do you notice that it falls outside the boundaries

12:13:14   10   of CD-38?

11   **A.**   Yes.

12   MR. TEBO: Brian, could you switch to the shading

13   for the enacted C-2193.

14   BY MR. TEBO:

12:13:36   15   **Q.**   Do you see the red line that has appeared on the map?

16   **A.**   Yes, sir.

17   **Q.**   Do you recognize it as the westernmost boundary of

18   CD-36 as it's currently enacted?

19   **A.**   I couldn't tell you exactly, but I'm going to assume

12:13:51   20   that's what you are showing me, yes, sir.

21   **Q.**   Will you agree with me that, now, Cedar Port -- Cedar

22   Point [sic] Industrial Park falls within the same district

23   as Baytown?

24   **A.**   Yes.

12:14:04   25   **Q.**   So you'll agree with me that the alternative maps,

Laura Wells, RPR, RMR, CRR, RDR

1 CD-38 would sever Baytown from one of the largest

2 industrial parks?

3 **A.**   There is a lot of logistics out there. I don't

4 know if you were -- earlier, you were talking to me about

12:14:27 5 Chevron. That's not where Chevron is. That's a large

6 group of logistical -- there are warehouses that hold

7 product for industry. Where people work -- the majority

8 of the people work are not in logistical. It's a growing

9 industry in Baytown, but that's not where they work. They

12:14:43 10 work in the refineries, which are not there.

11 **Q.**   Well, Mr. Loredo, I understand that there are a

12 variety of refineries in and around the city, but I will

13 point out to you that that is where the map labels Cedar

14 Point [sic] Industrial Park as being situated.

12:15:03 15 **A.**   I don't understand, but okay. Go ahead.

16 **Q.**   Let me ask: Are you familiar with the town of La

17 Porte?

18 **A.**   I am.

19 **Q.**   It's just across the bridge from Baytown, isn't it?

12:15:22 20 **A.**   Correct.

21 **Q.**   And La Porte is also a working town, is that fair to

22 say?

23 **A.**   Yes, sir, it is.

24 **Q.**   Much like Baytown, it is a town where many people are

12:15:31 25 employed in oil processing?

Laura Wells, RPR, RMR, CRR, RDR

1   **A.**   Correct. And a lot of port logistical.

2   **Q.**   And are you familiar with the town of Seabrook, as

3   well?

4   **A.**   Yes, sir.

12:15:44   5   **Q.**   And Seabrook, likewise, is a working-class town, fair

6   to say?

7   **A.**   I couldn't answer that question.

8   **Q.**   You testified that Pasadena is a working town --

9   **A.**   Correct.

12:15:57   10   **Q.**   -- where many people are employed in oil processing?

11   **A.**   Yes, sir.

12   MR. TEBO: Brian, could you show C-2198 with the

13   city shading.

14   BY MR. TEBO:

12:16:21   15   **Q.**   Can you see the town of La Porte as it appears on this

16   map, Mr. Loredo?

17   **A.**   Yes, sir, I do.

18   **Q.**   And do you see the boundaries of CD- -- of proposed

19   demonstrative CD-38, also on the map?

12:16:35   20   **A.**   No. It's -- is that the black line? I can't tell.

21   No, sir.

22   **Q.**   Do you see the black line?

23   **A.**   Correct.

24   **Q.**   And do you see the black 38 number on the map?

12:16:47   25   **A.**   Yes, sir, I do.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   And it's on one side of the black line?

2   **A.**   Correct.

3   **Q.**   And do you notice that the black line cuts through La

4   Porte?

12:16:57   5   **A.**   Yes, sir.

6   **Q.**   It divides it nearly in half, right?

7   **A.**   I don't know the exact boundaries of La Porte, but I'm

8   going to say yes.

9   **Q.**   Just from looking at the map, yeah?

12:17:09   10   **A.**   Okay.

11   **Q.**   And you see the town of Pasadena?

12   **A.**   Correct.

13   **Q.**   And the black line also runs through Pasadena, does it

14   not?

12:17:18   15   **A.**   But that's not --

16   **Q.**   I'm just asking you whether it runs through Pasadena,

17   Mr. Loredo.

18   **A.**   I don't think that's a fair characteristic because the

19   part of Pasadena that's represented on here, there is --

12:17:35   20   nobody lives there.

21   **Q.**   If I may just direct your attention to the map.

22   MR. TEBO: I'm going to object to that answer as

23   non-responsive.

24   THE WITNESS: Okay. Then, yes, it goes through

12:17:48   25   Pasadena.

Laura Wells, RPR, RMR, CRR, RDR

1   BY MR. TEBO:

2   **Q.**   And you understand -- I mean, part of the point I'm

3   getting at here is that there may be an area of the city

4   or nearby a city that may not be residential but is

12:18:03   5   nonetheless important to a city; is that fair to say?

6   **A.**   Yes.

7   **Q.**   I mean, some of the refineries around Baytown are not

8   in Baytown, but they are important to Baytown, right?

9   **A.**   Yes.

12:18:18   10   **Q.**   Now, you mentioned the Port of Houston a second ago,

11   right?

12   **A.**   Correct.

13   **Q.**   And the Port of Houston is also a major economic

14   presence in Baytown?

12:18:26   15   **A.**   Not as much as the refineries for Baytown.

16   **Q.**   But still a significant economic driver, fair to say?

17   **A.**   We're not -- I don't believe we are taxed by the

18   ports, so I couldn't answer that question wholeheartedly.

19   **Q.**   Are you aware that Baytown has a Port of Houston

12:18:43   20   terminal within it?

21   **A.**   Yes.

22   **Q.**   Are you aware that currently enacted CD-36 keeps most

23   of the Port of Houston infrastructure together within one

24   district?

12:18:55   25   **A.**   I didn't know that.

Laura Wells, RPR, RMR, CRR, RDR

	1	**Q.** Mr. Loredo, are you aware that the Gonzales
	2	alternative congressional map makes CD-38 an
	3	Hispanic-majority district but does so only by making
	4	CD-29 no longer a Hispanic-majority district?
12:19:34	5	**A.** I'm not familiar with that.
	6	MR. TEBO: Brian, could you pull up Joint
	7	Exhibit 899.
	8	BY MR. TEBO:
	9	**Q.** Do you see at the top of this page where it is
12:19:50	10	described as --
	11	MR. TEBO: Well, could you pull that down
	12	quickly, Brian.
	13	BY MR. TEBO:
	14	**Q.** Mr. Loredo, this is American Community Survey, ACS,
12:20:04	15	results for the 2015 to 2019 survey.
	16	Do you see the row that is highlighted, it says
	17	District 29?
	18	**A.** Yes.
	19	**Q.** And do you see a column that is labeled "percentage
12:20:20	20	Hispanic"?
	21	**A.** Yes.
	22	**Q.** What is that number under "percentage Hispanic"?
	23	**A.** 62.2.
	24	**Q.** Are you aware what CVAP is?
12:20:28	25	**A.** No.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   If I told you that it was "citizen voting-age

2   population," would you -- would that sound correct?

3   **A.**   Yes.

4   **Q.**   And this shows that the Hispanic CVAP is 62.2 percent

12:20:42   5   under the enacted map?

6   **A.**   Okay.

7   MR. TEBO: And, Brian, could you pull up Gonzales

8   Plaintiff 6 at page 93.

9   BY MR. TEBO:

12:21:07   10   **Q.**   And do you see the highlighted row in -- that appears

11   on this page?

12   **A.**   Yes.

13   **Q.**   It's describing a District 29.

14   And are you aware that it is describing your proposed

12:21:20   15   alternative District 29?

16   **A.**   Yes.

17   **Q.**   And do you see where -- do you see the column that is

18   headed "Hispanic CVAP"?

19   **A.**   Yes.

12:21:30   20   JUDGE GUADERRAMA: Mr. Tebo, what exhibit number

21   is this?

22   MR. TEBO: This is Gonzales Plaintiffs' Exhibit

23   Number 6, Your Honor.

24   JUDGE GUADERRAMA: Maybe I'm all wrong, but I

12:21:39   25   have that as Dr. Ansolabehere's CV.

Laura Wells, RPR, RMR, CRR, RDR

1   MR. TEBO: It is also Dr. Ansolabehere's report.

2   Yes, sir.

3   JUDGE GUADERRAMA: Okay. Thank you.

4   BY MR. TEBO:

12:21:50   5   **Q.**   And the number that appears in that column is less

6   than 50 percent, correct?

7   **A.**   Yes.

8   **Q.**   Are you aware that when the Texas Legislature drew

9   maps in 2021 that the 2015 to 2019 ACS figures were the

12:22:10   10   most current figures available to them at that time?

11   **A.**   I'm not familiar with that.

12   **Q.**   Are you familiar that when you filed suit, also in

13   2021, the ACS 2015 to 2019 figures were also the most

14   current?

12:22:23   15   **A.**   I'm not familiar with that.

16   **Q.**   Would you agree with me that removing one

17   Hispanic-majority district out of central Harris County

18   and adding another to replace it in southwest Harris

19   County does not make the congressional map more

12:22:37   20   advantageous for Latinos?

21   **A.**   Could you repeat the last part. I couldn't hear you.

22   **Q.**   Well, let me ask a different question, in fact.

23   Are you aware that the Gonzales demonstrative map, the

24   whole map, Plan C-2198, does not increase the number of

12:22:57   25   Hispanic-majority districts in Harris County?

Laura Wells, RPR, RMR, CRR, RDR

1 **A.**   Am I aware of that?

2 **Q.**   Yes.

3 **A.**   Because you are showing me the numbers.

4 **Q.**   Well, I'm asking you, as a plaintiff in this case, as

12:23:07   5   someone perhaps familiar with the plan, are you aware of

6   that fact?

7 **A.**   No.

8   MR. TEBO: Thank you. Your Honors, I have no

9   further questions for the witness at this time. I'll pass

12:23:21 10   the witness.

11   JUDGE GUADERRAMA: Thank you, Mr. Tebo.

12   MR. TEBO: Thank you, Mr. Loredo.

13   THE WITNESS: Thank you, sir.

14   MR. MEDINA: Just a few questions on redirect,

12:23:29 15   Your Honor.

16   JUDGE GUADERRAMA: Mr. Medina.

17   MR. MEDINA: Can I ask Mr. Christian to pull up

18   the demonstrative that was used earlier.

19   MR. TEBO: Which one?

12:23:43 20   MR. MEDINA: The one showing the Cedar Port

21   Industrial Park.

22   MR. TEBO: Yes. Just give us a moment.

23   **REDIRECT EXAMINATION**

24   BY MR. MEDINA:

12:23:53 25 **Q.**   All right. While we're waiting for that, you were

1   shown on direct examination -- or cross-examination,

2   Mr. Loredo, a map of the city of Pasadena?

3   **A.**   Yes.

4   **Q.**   Okay. And Mr. Tebo pointed out to you that a portion

12:24:13   5   of Pasadena is not in Congressional District 29 under the

6   demonstrative map?

7   **A.**   Correct.

8   **Q.**   How would you describe the population of that portion

9   of the city of Pasadena?

12:24:26   10   **A.**   There is not a lot of homes there. I think the reason

11   that -- if I remember correctly, the reason Pasadena even

12   has that piece is because they wanted it to go all the way

13   to Galveston Bay. So there are a lot of areas that are

14   industrial there that are -- that have -- that are not

12:24:40   15   populated by the people. The majority of the people in

16   Pasadena, Texas, live within the bounds of Pasadena ISD.

17   **Q.**   So I have this demonstrative up here that Mr. Tebo

18   discussed with you. And it shows the Cedar Port

19   Industrial Park. Is that it?

12:24:58   20   **A.**   Yes, sir.

21   **Q.**   As far as you are aware, are there refineries in the

22   Cedar Port Industrial Park?

23   **A.**   Not to my knowledge. I don't live too far from there,

24   and those are -- if I remember correctly, those are mostly

12:25:13   25   logistical areas -- areas that hold logistical warehouses.

Laura Wells, RPR, RMR, CRR, RDR

1   **Q.**   Can you describe on this map where the Baytown

2   refinery is.

3   **A.**   The Baytown ExxonMobil, there is a gigantic white

4   spot, right -- maybe northwest of where it says "Baytown."

12:25:31   5   Right above East Baytown, there is a gigantic white spot.

6   That's ExxonMobil. And if you go to the area north, where

7   it says Pinehurst, right north of that is where he was

8   talking about was Chevron.

9   MR. MEDINA: Can I get Gonzales Exhibit 6,

12:25:57   10   please, page 71. Oh, I'm sorry. 72. No. 71.

11   And can you zoom in on the top column, the top row

12   that shows the labels.

13   BY MR. MEDINA:

14   **Q.**   Mr. Loredo, do you see there where it says "Hispanic

12:26:38   15   CVAP" and then it describes the data, can you read that

16   date range to us?

17   **A.**   The date range is 2016 to 2020.

18   **Q.**   Okay.

19   MR. MEDINA: Stephen, can we go down to the row

12:26:49   20   for District 29.

21   BY MR. MEDINA:

22   **Q.**   And can you read for me, Mr. Loredo, the Hispanic CVAP

23   in District 29 as of the 2020 ACS data.

24   **A.**   51.4 percent.

12:27:11   25   MR. MEDINA: And just so the record is clear, can

Laura Wells, RPR, RMR, CRR, RDR

12:27:21

1 we zoom in, Stephen, on just the title of this table.

2 BY MR. MEDINA:

3 **Q.**   Okay. And can you just please read the title of this

4 table, Mr. Loredo.

5 **A.**   "Table 9, Demonstration Map 2, Total and Citizen

6 Voting-age Population of CDs."

7   MR. MEDINA: Thank you. I have nothing further

8 for Mr. Loredo.

9   JUDGE GUADERRAMA: Mr. Tebo.

12:27:35 10   MR. TEBO: Nothing further, Your Honors.

11   JUDGE GUADERRAMA: May the witness be excused?

12   MR. MEDINA: Yes, Your Honors.

13   JUDGE GUADERRAMA: Mr. Tebo.

14   MR. TEBO: Yes, Your Honor.

12:27:51 15   JUDGE GUADERRAMA: Mr. Loredo, thanks for coming

16 in. You are excused and free to go.

17   It's 12:28. So we're going to recess for the week.

18 We'll see you-all back -- I think it's going to be

19 Wednesday morning at 9 o'clock. And we'll resume our

12:28:09 20 proceedings then. We're in recess.

21   THE MARSHAL: All rise.

22   MR. VELEZ: This Court is adjourned for the day.

23   (Proceedings concluded at 12:28 p.m.)

24

25

Laura Wells, RPR, RMR, CRR, RDR